

10 FASCINATING FACTS ABOUT EDIBLE PLANTS, P. 33



**HOMEMADE  
CONVENIENCE  
FOODS**  
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# MOTHER EARTH NEWS

THE ORIGINAL GUIDE TO LIVING WISELY

OCTOBER/NOVEMBER 2015

## SMALL-SPACE FRUIT TREES

Our Quest to  
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BARBARA DAMROSCH



KRISTEN KILFOYLE



BRYAN WELCH; BELOW: E.K. WILLIAMS



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# Let's Convert CAFOs into SPOs

Nearly 50,000,000 chickens and turkeys living in more than 200 concentrated animal feeding operations (CAFOs) and 20 backyard flocks were “depopulated” earlier this year, according to the U.S. Department of Agriculture (USDA). That’s *50 million!* All because of a devastating bird flu outbreak. The industry’s biosecurity procedures failed, big-time.

Most of the birds in this year’s outbreak, about which you can read more on Page 11, weren’t actually killed by the avian flu. Because the highly contagious virus spreads so rapidly in the CAFOs’ crowded, giant barns, the birds were killed by people who were paid by taxpayers to destroy all the exposed poultry as soon as a few birds were diagnosed. Estimated total cost to cope with this latest CAFO catastrophe? About \$3.3 billion, plus at least \$700 million in tax money, writes Maryn McKenna for *National Geographic*.

The media doesn’t talk much about the crowding, filth and stress that make these birds so vulnerable to infection. The CAFO industries seek “ag-gag” laws to hide what’s going on, and refuse to even allow reporters into the barns. Producers have expressed dismay that their biosecurity protocols didn’t protect their flocks from this influenza virus, which mutates often and spreads rapidly by migratory waterfowl. Surely producers could expect their low-paid workers to follow detailed hygiene rules and take great care to treat their avian wards like patients in intensive care, right? Experts expressed surprise when USDA data suggested that winds may have carried the virus into the barns. Really? Why would anyone think they could devise “biosecurity” tight enough to prevent a highly contagious, microscopic virus from getting inside these CAFOs?!

And then there’s the very real probability that this bird flu strain will eventually manage to mutate again, into a form that could infect and kill humans. If a new

virus is as deadly to humans as the current form is to poultry, then continued support for the CAFO system is going to look like one of the stupidest choices of this century.

Another aspect no one talks much about is that these genetically souped-up CAFO birds are fed a highly unnatural diet of grains and vitamin powders that yields meat and eggs lacking in essential omega-3 fatty acids and various other nutrients.

Influenced by lobbyists, the government goes along with a poultry industry that’s “too big to fail.” The USDA is hiring thousands of new employees to be ready if an outbreak flares again this fall. It’s past time to admit that this CAFO system for pigs, cattle, poultry and fish is profoundly inhumane for livestock, and bad for the people who eat the resulting meat and eggs. To learn more about how you can support a transition to a better system, we highly recommend *The CAFO Reader*, whose authors write, “Many have been advocating for some time for an ambitious transformation in U.S. agriculture. ... A **smart pasture operation (SPO)** ... is one of the easiest entry points for beginning farmers in current U.S. agriculture. Start-up costs are relatively modest and markets for healthfully raised animal products are underserved and growing rapidly. ... Reform of USDA Farm Bill programs—which pump billions of dollars and largely establish the rules of modern agriculture—are seen as an essential way to fund the transformation to a pasture-based livestock economy.”

Rallying together to push back against this system is our best hope for change. Want to learn more so you can share with your legislators? We recommend the Union of Concerned Scientists’ report at <http://goo.gl/djpNkH>, the Humane Society’s analysis at <http://goo.gl/LtWM9>, and the website of the Pew Commission on Industrial Farm Animal Production at [www.NCIFAP.org](http://www.NCIFAP.org).

—MOTHER



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EDITORS' PICK

## Harvesting the Commons for Chickens

Joel Salatin's article “The Lowdown on Rotational Grazing” from your April/May 2015 issue got me thinking about how I could come as close as possible to this ideal in my tiny New York City yard with my flock of three hens.

During one of my son's ball games, I became aware of the abundance of clover and dandelions surrounding me. I thought, if I can't bring my chickens to the pasture, I can bring the pasture to my chickens. I brought some pickings home to my birds. The next week, I harvested more wild greens from the park. I plan to continue this weekly pattern, until I'm stopped and questioned or winter comes. I encourage my fellow city dwellers to take back their share of the commons as well.

*David Galalis  
Brooklyn, New York*

*If you see clover and dandelions in a lawn, that's a good sign that herbicides aren't being used. —MOTHER*

## Ceramic Tile in Solar Ovens

In his article “Everyday Solar Cooking” (August/September 2015), Joel Dufour mentions putting a rock or brick into the solar oven for thermal mass. I use a ceramic tile in mine. It doesn't take up much space, plus it absorbs heat quickly and distributes it evenly. You can buy a ceramic tile in any of the big-box stores for just a few dollars. They come in many sizes up to 24 inches square. The tile will be cheaper if it's chipped or damaged.

I also use a ceramic tile in my kitchen oven to make it a “pizza oven” while baking pizza or breads. It's much cheaper than those special pizza stones that are basically the same thing.

*Joe Kaye  
Phoenix, Virginia*

## Potting Bench Success

I read MOTHER EARTH NEWS regularly, and the DIY project from the article “Nifty Potting Bench Plans” in the April/May 2015 issue caught my attention. My wife, Tracy, is an avid gardener, but we didn't have a place to store and



The Kinsey family built and gifted this sturdy potting bench.

organize our tools, pots, seeds and supplies. The bench seemed like a cool Mother's Day gift idea and a creative way to engage our three kids in a hands-on project.

I spend a good portion of my days at the computer, but I've found that nothing feeds the soul like working with your hands! To build the bench, I worked one-on-one with each of my kids, teaching them a few woodworking basics—starting with rules for safety.

The project provided a few memorable days away from the iPads and TV screens that too often consume people in this day and age. Plus, Tracy absolutely loves the bench. For me, the best part is spotting all the minor imperfections from the

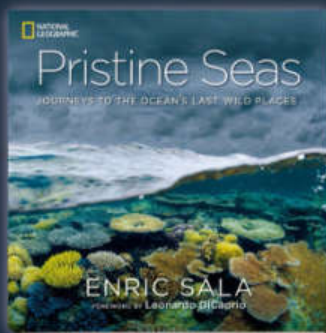
kids' work—the dents, scratches, split wood, and a bent nail or two. The imperfections likely aren't noticeable to anyone besides me, but they'll provide a lasting memory of those fun days we spent working together in the garage. Everyone who stops by our house comments on how awesome the bench is and they ask, “Was it a kit? If so, where can I get one?”

*Matt Kinsey  
Winchester, Massachusetts*

*This DIY potting bench was designed by master woodworker Spike Carlsen, author of The Backyard Homestead Book of Building Projects, available at <http://goo.gl/QaSjbM>. Review his free potting-bench plans at <http://goo.gl/sP2CsK>. —MOTHER*



# FOLLOW ONE MAN'S ODYSSEY TO SAVE THE OCEAN



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Dear MOTHER

## Tips for Keeping Cool

In response to "Stay Cool Naturally" (August/September 2015), I put up corrugated cardboard in my hot windows to block the sun, and it does

a great job of keeping the inside of my house cool. I also use the cardboard in winter to block out the cold. This technique works well for both seasons!

Eileen Atkinson  
Clarkrange, Tennessee

## Limitations of Lyme Disease

I'm glad you discussed Lyme disease in "Top Ways to Get Rid of Ticks" (August/September 2015).

(CONTINUED ON PAGE 82)

## Homesteaders Must Start with Money, Right?

*Our editors enjoyed hosting a conversation on the MOTHER EARTH NEWS Facebook page about going off-grid without much money. Two of our 2015 Homesteaders of the Year responded with helpful feedback about how their families have achieved homesteading success with limited means. —MOTHER*

Naysayer here, but how does the Trumpey family (featured in "The Many Paths to Self-Reliant Living: Homesteaders of the Year," August/September 2015) manage to purchase 40 acres, build a 2,200-square-foot house with expensive glazing and a metal roof, obtain and take care of all the animals, plant and maintain a large garden, preserve foods, and slaughter animals for meat, all while working two full-time jobs?

Something isn't right here. My initial guess is that they had plenty of money prior to doing any of this—enough money to hire help all along the way. This is not a lifestyle for the average Joe.

Marilyn Ellis  
via Facebook

**Joe Trumpey's Response:** We established our homestead with hard work, and we continue to work hard every day. We don't have any trust funds or hired employees on our homestead. It's just us and our love of the farm and home.

We always have more to do and it didn't happen in a day. First, we saved for seven years, and now we have a mortgage. We started small, with just a couple of sheep and a handful of chickens, more than 25 years ago.



**The Trumpeys saved money by building their straw bale home themselves.**

P.S. Good eye on the two most expensive parts of the house. The metal roof is from Menards. It cost slightly more than \$100 per square foot, but it's guaranteed for life, was easy to install, and was made in Indiana. The Jeld-Wen windows were important for the passive solar design.

**Matthew Eby's Response:** I can't speak for the others in the article, but for us, we started with almost nothing but a dream and the willingness to do whatever it took to turn that dream into a reality. This meant no vacations for more than five years, working 110 to 120 hours a week during the summers for a few years, and many other sacrifices.

Living this lifestyle means leveraging things that you have access to. It's amazing what's available if you start looking around. A lot of money doesn't guarantee a successful homestead—much of the time, it just allows for more expensive mistakes!



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# Bird Flu Explodes in Factory Farms, *Again*

Earlier this year, nearly 50 million chickens and turkeys were killed when another outbreak of bird flu swept across the country, showing us once more the profound flaws in our industrial food system.

Imagine you're a young turkey being raised in an enormous, enclosed barn during a chilly Minnesota spring. You're fed processed corn and soy products laced with synthetic vitamins. You never ingest a single mouthful of greens, nor any insects or worms—mainstays of your natural diet. You have radiant heaters instead of a mother, and artificial lights are your only sun. Conditions are crowded and filthy. Ammonia in the air makes breathing difficult. Suddenly, other turkeys around you are getting sick and dying. Despite the efforts of your keepers, a deadly virus has blown in.

Envisioning what comes next is difficult—a 15-state outbreak of a highly contagious form of bird flu sends government workers in hazmat suits hustling to use lethal gas or foams to kill entire barns full of poultry. They call it “depopulating” the exposed birds.

The first million to die were turkeys, which are highly susceptible to viruses carried in by migratory waterfowl in spring. These unfortunate turkeys were being raised by Jennie-O and other poultry companies in Minnesota, the northern limit of where wild turkeys can survive, and the virus hit months ahead of when natural turkey hatching might take place, according to the Minnesota Department of Natural Resources. A domino effect of infection began. The casualty numbers skyrocketed when strong winds, and possibly feed trucks, helped transport the virus to the egg factories of northwest Iowa, where 31 million laying hens and pullets eventually had to be put down in an attempt to prevent the illness from spreading into states farther south, where even more poultry is raised. This brought the tally to about 50 million total birds killed. This outbreak's financial

losses are estimated at \$3.3 billion so far, including nearly \$700 million in costs incurred by the U.S. Department of Agriculture (USDA), according to Harvest Public Media.

The industrial poultry system essentially raises birds in intensive-care hospital conditions. Producers' detailed “bio-security” plan attempts to keep viruses and other germs out of their giant barns. This year, experts expressed surprise when USDA data eventually suggested that persistent 25 mph winds were what helped spread the virus. Poultry barns, of course, aren't windproof.

In addition to wind, sunlight plays a part in this equation, too. Mike Badger, executive director of the American Pastured Poultry Producers Association, points out that sunlight kills the bird flu virus, but most industrially raised birds are given no access to sunlight.

“Pastured-poultry producers not only believe living outdoors is essential for poultry, but that it's a fundamental building block for the health of a flock,” Badger says. “Scientists say that sunlight kills these viruses, so it stands to reason that birds that go outside are less likely to get sick.”

Another big difference between conventional and pastured poultry is the density of birds. Factory-

farmed birds are allowed barely enough room to move, so germs spread rapidly from bird to bird. Their manure-filled, cramped conditions are a perfect recipe for viruses and bacteria to mutate into virulent strains.

As we go to press in August, the spring 2015 outbreak seems to have subsided. Bird flu outbreaks usually recede in summer but can reappear when temperatures drop, and U.S. Secretary of Agriculture Tom Vilsack has announced that the federal government is preparing for a bird flu flare-up this fall that could be twice as bad as the catastrophe earlier this year. Meanwhile, most industrial chicken farmers are likely not resting easy these days.

—Barbara Pleasant



**Cramped turkeys like these were among the first to die in a 50-million bird kill-off due to avian flu. Hundreds of workers, and even National Guard members, were deployed to kill the birds en masse and assist with sanitation, but few photos exist, and we were refused permission to print those we could find.**



# Bucket Cloches: New Mini-Greenhouses



**Greenhouse Buckets shelter garden crops so you can extend your season.**

Gardeners, if you're aching to keep your crops going longer through late fall and winter, and itching to get new crops into the ground as early as possible in spring, you may want to try Greenhouse Buckets. A nifty new type of garden cloche about the size of a 5-gallon bucket, these clear plastic protectors trap heat on sunny days to help shield crops from frost, or to help seeds sprout early. The buckets' tops feature adjustable vent rings to provide gardeners a means to control temperatures inside the cloches, too.

In many regions, spring crops need protection from high winds as much as, or even more than, they need protection from the cold. These sturdy buckets can provide that protection, and are indeed like portable mini-

greenhouses. You can use them initially to speed germination of early spring spinach, lettuce, cabbage or other cool-weather crops, and then, a few weeks later, shift them to protect your newly transplanted tomatoes and peppers. Young plants covered with cloches will grow much faster in early spring. Then, in fall, you can use the Greenhouse Buckets to shelter select plants from frost.

I've found similar garden cloches useful, but, for some reason, products like this aren't easy to find, so I'm glad to see this new, U.S.-made design come to market. Greenhouse Buckets are priced at three for about \$35, with free shipping if you order a set of six. Learn more or place an order at [www.GreenhouseBuckets.com](http://www.GreenhouseBuckets.com).

—Cheryl Long

## A Successful Solar Project in Seattle

In the cloudy northwest corner of the United States, the Bullitt Center is changing the way people think about what solar power and sustainable building can accomplish. Called the "greenest commercial building in the world," the project was created to influence the way people design, build and operate commercial real estate.

The 52,000-square-foot, multi-tenant office building, constructed in 2012, features a 242-kilowatt solar photovoltaic (PV) array to provide the structure's annual energy needs. More impressively, the building is in Seattle, a city known for gray, rainy days and inconsistent sunshine.

Energy Use Intensity (EUI) is a common green building measurement used to describe the amount of energy a building uses annually relative to its square footage. While the projected energy budget of the Bullitt Center shaped all aspects of its design—with an expected EUI of 16 kBtu per square foot per year—in reality, the building is exceeding all projections. In 2014, the Bullitt Center produced 60 percent more electricity than it used, achieving an EUI of 9.4,

which is a 90 percent reduction from the average office building in Seattle. Because tenant occupancy was still increasing during that time period (the building is now 100 percent leased), the owners expect the Bullitt Center will typically operate with an EUI of 12. This makes it the most energy-efficient office building in the United States by a wide margin, as the national median for office buildings is an EUI of 67.



**The Bullitt Center displays solar's potential, even in cloudy locales.**

The 14,000-square-foot PV array features 575 SunPower panels, which were the most efficient available at the time of purchase. While the solar panels are operating as expected, the building itself is performing beyond expectations. Because so many systems are optimized in the building—from a geothermal boost for the hydronic heating and cooling system to ultra-efficient windows with exterior automated blinds—tenant plug loads, which refers to the sum of energy used by anything plugged into an outlet, are a critical variable in energy performance. Luckily, occupants have embraced the project goals and have been able to work comfortably within the recommended energy budgets to help the project succeed.

With the Bullitt Center operating as a net-positive-energy office building in cloudy Seattle, some have wondered, "What's up, Phoenix?" and are asking the same about virtually every other major city in the United States. To learn more about the Bullitt Center, visit [www.BullittCenter.org](http://www.BullittCenter.org).

—Brad Kahn





The showy blooms of native sourwood trees offer plentiful nectar.

## Trees for Bees

It's old news that beekeepers are struggling to provide diverse, pesticide-free forage for their colonies, as scientists have been voicing alarm about the decline in pollinator populations for more than a decade. But part of the solution to help today's stressed, malnourished bees may be in your own backyard: Consider the incredible quantity of nectar produced by a tree in bloom. Now consider the compounded effect of many trees blooming in strategic sequence throughout the growing season.

David Hughes of Rock Bridge Trees mail-order nursery ([www.RockBridgeTrees.com](http://www.RockBridgeTrees.com)) markets a collection of trees that are perfectly suited to pollinators and, most importantly, that bloom successively during most of the growing season. "If you're going to have trees in your landscape, let them be both beautiful and useful," Hughes says. Heavily blooming shade trees top his list of bee-friendly tree species.

Increased diversity and security of nectar and pollen sources benefit honey bees in manifold ways, such as reduced stress, increased life span, heightened immune system response, more precise communication and, yes, increased honey production.

For diverse bee forage from early spring through late summer, consider the following trees for your property: black locust (*Robinia pseudoacacia*), catalpa (*Catalpa* spp.), linden (*Tilia* spp.), manzanita (*Arctostaphylos* spp.), maple (*Acer* spp.), honey mesquite (*Prosopis glandulosa*), sourwood (*Oxydendrum* spp.), sumac (*Rhus* spp.), tulip poplar (*Liriodendron tulipifera*) and willow (*Salix* spp.).

While all of these trees can provide excellent food for honey bees and many other pollinators, your top choice should always be regionally appropriate. A tree that's comfortable in its environment is much more likely to be a healthy tree. For comprehensive, area-specific advice on bee-friendly trees and bloom times, check out the nonprofit Pollinator Partnership's Planting Guides at [www.Pollinator.org/guides.htm](http://www.Pollinator.org/guides.htm).

Entomologist and author Doug Tallamy notes in his book *Bringing Nature Home* that "a plant that has fed nothing has not done its job." Raise the bar for what's invited into your landscape, and the benefits will easily outweigh the time and cost of planting some buzz-worthy trees.

—Laura Dell-Haro

## Gauge Your Glyphosate

The World Health Organization announced in March that glyphosate—the active ingredient in popular herbicides, including Roundup—is probably carcinogenic to humans. (Go to <http://goo.gl/NbtS2K> to read our coverage about this announcement.) Roundup is one of the most commonly used herbicides in the United States, especially since the introduction of Roundup Ready genetically modified crops in 1996. Now, more people than ever are wondering just how much of this potentially dangerous product they've been exposed to. Feed the World, the Organic Consumers Association and others have teamed up to offer glyphosate testing for the public. For \$119 per sample, participants can have their urine, breast milk or tap water tested. At this point, results from breast milk suggest that glyphosate may be bioaccumulative—a possibility that flies in the face of current regulation assumptions. Recent studies also reveal a correlation between an organic diet and lower glyphosate levels in the body. I took part in this testing, and you can read about my experience and find out how to submit your own sample at <http://goo.gl/Lhccxq>.

—Hannah Kincaid

## Talk Foodie to Me

Sustainable food, farming and culture now have a louder voice on online radio, thanks to the Heritage Radio Network. Launched in 2009 by Patrick Martins, founder of Slow Food USA and Heritage Foods USA, this nonprofit, online radio station digests a wide palate of food-related topics. The network has already interviewed notable food advocates, including Alice Waters and Michael Pollan. A

sample of the show's scheduled programs provides a good snapshot of its coverage: Wild Game Domain, Inside School Food, Cutting the Curd, The Farm Report, and even Beer Sessions Radio. The site stores all past interviews in a searchable archive, and you can sign up for a free newsletter to easily keep up with the latest content. Tune in at [www.HeritageRadioNetwork.org](http://www.HeritageRadioNetwork.org).

—Jennifer Kongs



## Savvy Seed Saving

Earlier this year, Seed Savers Exchange (SSE), a nonprofit organization dedicated to preserving and promoting seed diversity, released a comprehensive book on saving seeds called *The Seed Garden: The Art and Practice of Seed Saving*. The book was created in collaboration with the Organic Seed Alliance. The project was in the works for four years, says SSE Executive Director John Torgimson, and it brings together the tips and expertise of many veteran seed savers. This definitive, user-friendly guide features nearly 300 color photographs, along with crop profiles and charts of at-a-glance seed-saving essentials. If you're serious about saving your own seeds, you'll want to own this wonderful resource. It's available on Page 65.

—Shelley Stonebrook





# BACK TO BASICS

*Grow Gorgeous Garlic  
and Perfect Potatoes  
for Your Table*





## Garlic's pungency complements potatoes' congeniality in these comforting recipes from around the world.

Story and photos  
by Barbara Damrosch

Potatoes and garlic, together or separately, are pillars of the kitchen. Of the major carbohydrate crops of the world—wheat, rice, corn and potato—the homely spud is the easiest for a home gardener to grow in a meaningful amount. And for adding flavor to daily fare, earthy and pungent garlic is almost as essential as salt. “Why should I grow

either, when they're cheap to buy and easy to store? What would a fresh harvest add?” you might ask. Growing your own allows you to try out unusual colors or varieties, such as blue or fingerling potatoes, that are seldom commercially available, and to choose organic seed garlic and potatoes if you wish. Their flavors may not be as fleeting as that of just-picked corn, but after you've tasted just-dug potatoes or tender fresh garlic heads from the summer harvest, you'll look forward to them each year.

### Grow Your Bud, the Spud

Seed potatoes are those specifically for planting. You can find them at many garden centers and mail-order companies, or save them from year to year. They can be whole, or cut into pieces that each include at least one eye.

Put them in the ground when grass starts to grow, no earlier than two weeks before your last anticipated frost date, spaced 12 inches apart and 3 inches deep. Chitting potatoes, or pre-sprouting them







on a tray in a warm, bright place, will give them a head start.

When your plants reach about 6 inches tall, hill up potatoes with soil or mulch deeply with straw to protect them from sunlight and keep them from turning green and bitter. Though mulch may attract voles, which nibble the tubers, it does help keep the soil moist—a good defense against another important pest, the Colorado potato beetle. Reduce the beetle population by rotating your potato crop; laying spun-bonded polyester row covers over your potatoes after planting; and picking off any eggs, larvae and winged adults.

As soon as you see beautiful pink, lavender or white flowers on the plants, work your fingers into the earth around them to grabble out a few exquisite “baby news.” Then harvest as needed, keeping the bulk of your potatoes in the ground even after



Just-dug potatoes and gracefully loopy garlic scapes are delicacies for diligent gardeners.

the foliage dies down. Light, fluffy soil, rich in organic matter, makes potatoes easy to dig with your hands. Be sure to keep them well-mulched and covered to prevent sun rot and, later, damage from light frosts. Dig remaining potatoes when hard frost is forecast and store them in the

cellar, or whatever dark, humid, cool-but-frost-free spot you can find.

Ask local gardeners which potato varieties do well for them. Our favorite for an early new-potato harvest is a round, red-skinned, yellow-fleshed one called ‘Rose Gold’ from Wood Prairie Farm in



## Skordalia: Greek Potato Dip

A Greek family introduced me to this dish, and taught me to pronounce it properly as “Skor-dal-YAH.” Traditionally, *skordalia* is part of an enticing spread of small plates called *meze* (MEZ-zay), served at the start of meals. *Skordalia* is sometimes a sauce, sometimes a dip. Most commonly, it’s potato-based—I use a yellow-fleshed baking potato such as ‘Charlotte’—but almonds, walnuts or even bread can take the potato’s place. Garlic is a must.

I like to serve skordalia as a thick purée into which you can dip crackers, or plunge pita bread that’s been cut into small triangles, brushed with olive oil, and toasted briefly in the oven until crisp. It’s even better with whatever raw vegetables are in season. In fall, I pair skordalia with fresh-dug carrots and radishes, both crisp and sweet from the cool soil. *Yield: 6 servings as an appetizer.*

**Directions:** Peel the potatoes, cut into large chunks, and simmer in water until tender. Drain and put through a ricer or food mill. They can also be mashed with a potato masher, but don’t use a blender or food processor, which can turn potatoes gummy. Grate or press the garlic and add to the potatoes.

Gradually pour in 1/2 cup of olive oil, stirring vigorously. Stir in the lemon juice, salt and a generous grind of pepper, then taste. The amount of any ingredient can be tweaked to suit your palate.

Serve the mixture in a bowl, or mounded on a plate. Drizzle with the remaining olive oil and sprinkle with paprika. It’s fine at room temperature, but not chilled.

### Ingredients

- 3 medium baking potatoes, about 1 pound total
- 3 cloves garlic, peeled
- 1/2 cup plus 2 tbsp extra-virgin olive oil
- Juice of 1/2 lemon
- 1/2 tsp salt, or to taste
- Freshly ground black pepper
- Sweet paprika, for garnish





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## Egg and Potato 'Toasts'

There's nothing wrong with poached eggs on toast, but why not try eggs atop a vegetable from the garden? Egg and potato recipes are classic for breakfast. When my sister, Eloise, told me she used potato skins instead of toast for an eggs Benedict-style breakfast dish, I tried it with halved potatoes, baking them whole first, then cutting them in half and pressing them flat, and finally frying them in butter until crisp. I leave the skins on because they're full of vitamins and because they hold the potatoes together.

This dish takes longer than eggs on toast, but it's great for a slow Sunday morning, and the pseudo-hollandaise sauce I put on top is simpler to make than the real thing. Its golden color comes from adding a pinch of saffron to a cream reduction, not from beating butter into egg yolks. Saffron is an expensive seasoning, but you don't need much, and I find a 1-ounce tin lasts me at least three years. No saffron? Use paprika or turmeric for color.

Make this a complete meal by serving steamed spinach or kale on the side, and fruit for dessert.

*Yield: 4 servings.*

**Directions:** Preheat oven to 350 degrees Fahrenheit. Bake the potatoes until soft inside (up to 1½ hours). When they have cooled slightly, cut in half lengthwise and place on a cutting board, skin-side-up. Pound lightly with a mallet until they are about 1/4-inch thick. Melt the butter in a large skillet and fry the potato halves skin-side-down over medium heat for a few minutes, then gently flip with a large spatula and fry on the other side until crisp and golden brown. Do this in two batches if needed. Turn off the oven and set the potatoes aside on warm plates or a baking sheet in the still-warm oven.

Rinse and wipe out the skillet. Pour in the cream, then add the garlic and saffron. Reduce the cream by simmering over medium heat, stirring frequently, until it is the consistency of thick hollandaise sauce, about 15 minutes. Add the lemon juice and stir it in thoroughly. Remove the sauce from the heat and keep warm.

Poach the eggs in an egg poacher or in a small, 2-inch-deep skillet, no more than four eggs at a time. If using a skillet, add a teaspoon of white vinegar to the water to keep the egg whites compact. Break the eggs into the water and simmer gently. Set two potato halves on each person's plate, and when the egg whites are no longer runny, lift each egg with a slotted spoon to let the water drain, and place it on a potato half. (Don't worry if the eggs overcook; they're good that way, too.) Generously spoon the sauce over the eggs, sprinkle with salt and pepper, and serve immediately.

### Ingredients

- 4 large baking potatoes
- 4 tbsp butter
- 1½ cups heavy cream
- 2 cloves garlic, peeled and grated or pressed
- Pinch of saffron
- 1 tbsp lemon juice
- 8 large eggs
- Salt and pepper, to taste



Bridgewater, Maine. For the firmer baking type, we love the brown-skinned, yellow-fleshed 'Charlotte' from Potato Garden in Austin, Colorado. The widely available 'Kennebec' is a good all-purpose potato.

## Cook Up Peerless Potatoes

Few foods are as versatile as potatoes. Boil, mash, bake, fry—and then do it all again with variations. Mash them with feta cheese, spinach, or—of course—garlic. Bake potatoes, scoop out their soft flesh, then mix with cheddar, horseradish, bacon or whatever tastes good, and return the filling to the skins. Scallop potatoes and let them bubble in cream until they thicken and absorb all that goodness. Refrigerate a refreshing *vichyssoise*—a simple potato soup—for summer days, or heat a hefty soup with kielbasa and kale for cold, dark evenings (see the recipe on Page 20). Serve a light, lemony potato salad with tarragon and peas in summer, or a hearty one with boiled eggs, mustard and mayo in fall. Fry potatoes with duck fat any time you have both. In any potato recipe, I don't remove the vitamin-rich skins unless I'm using a food mill or ricer, where they would clog the holes.

## Cultivate the 'Stinking Rose'

Sow garlic by poking individual cloves into the ground 4 inches apart and 2 inches deep, with the pointy end up. This is best done in fall, after the soil temperature drops to 50 degrees Fahrenheit at 4 inches down, to avoid premature growth. (Spring-planted garlic bears later and yields smaller heads, but often stores longer into winter.) From each clove sown, you get a whole head the following year. We use a seaweed mulch to protect and enrich garlic through winter, but you can also use straw or chopped-up autumn leaves.

Two types of garlic are available—softnecks, which have loose tops you can braid, and hardnecks, with long, stiff center stalks. Softnecks keep the longest, but hardnecks are more cold-hardy and have larger cloves that are easier to peel. Softnecks can be left to mature like onions and harvested when the tops die down. Hardnecks are best harvested when the



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Circle #46; see card pg 81





foliage has begun to brown but six or so green leaves remain.

If you grow hardneck types, pick the garlic scapes (green flower stems) they produce in midsummer. These scapes—some of which grow in wonderful loopy circles, as on the hardneck type called Rocambole—become deliciously chewy and caramelized when grilled, roasted or sautéed in olive oil.

Local farms tend to provide seed garlic best suited to your area. We buy unnamed heirlooms from an Italian neighbor who has grown them for years and adapted them to Maine. Filaree Garlic Farm in Okanogan, Washington, is a good mail-order source. Ron Engeland's *Growing Great Garlic*, available online at <http://goo.gl/Hyxhgx>, is the garlic bible.

## Garlic's Gustatory Gusto

Garlic is a palatable powerhouse that can sometimes overwhelm food, but cooking takes the edge off its harshness. Roasting garlic softens it into a sweet, aromatic paste. Scattering a handful of garlic cloves around a chicken as it roasts is a simple act that leads to gravy nirvana. Garlic softens the bite of strong-flavored greens, such as dandelion and turnip tops. It's the *raison d'être* of hummus, aioli and pesto. Garlic elevates the humble baked bean.

Garlic also yields a few byproducts that cooks treasure. In spring, when the new shoots emerge, you can harvest whole plants as scallion-like "green garlic." We sow the smallest of our saved cloves for that purpose, using the biggest ones as seed garlic to get big heads the next harvest season. 🌱

Barbara Damrosch farms and writes with her husband, Eliot Coleman, at Four Season Farm in Harborside, Maine, where sturdy bowls of potato soup frequently chase the chill on cool, fall evenings. She is the author of *The Garden Primer* and, with Coleman, *The Four Season Farm Gardener's Cookbook*. Both are available on Page 65.



## Hearty Potato and Kale Soup

Here's a soup to warm your bones after raking autumn leaves, toting in firewood, or playing football in the yard. We make it a nutritious meal-in-a-bowl by adding a leafy cooking green, such as kale, spinach, turnip greens or Swiss chard.

Any sausage will provide a hearty meat element, but we especially like the deep, slightly spicy flavor of kielbasa. Traditional in Poland, kielbasa is usually sold tied in a loop, weighing about 1 pound. Some brands are a bit bland, and if you can't find one you like locally, try the kielbasa from Harrington's of Vermont (available online at [www.HarringtonHam.com](http://www.HarringtonHam.com)). We sometimes use the whole loop, but even if you omit the meat altogether, this will still be a sturdy, fortifying dish. *Yield: 4 servings.*

**Directions:** Cut the kielbasa into rounds 1/4-inch thick. Pour the olive oil into a medium skillet and fry the rounds on both sides to brown them, taking care not to burn them, over medium heat. Leave the fat in the skillet and transfer the kielbasa to a Dutch oven or heavy casserole. Trim and discard the leeks' green tops and split the white shanks lengthwise, then rinse to remove all traces of soil. Chop into 1-inch pieces and add to the skillet along with salt. Cover and cook over low heat, stirring often and checking to make sure the leeks don't burn or stick to the pan; add a little water if needed. After about 10 minutes, add 2 tablespoons of water, stir, and add the leeks to the sausage, scraping the skillet with a spatula to get all the tasty brown bits.

Strip the kale leaves from the tough stems and ribs, and then chop the leaves. Add them to the sausage and leeks along with the potatoes, garlic, thyme, bay, sage, pepper and 3 cups of water. Cover and simmer until the potatoes are tender and have absorbed the various flavors—about 30 minutes. Stir in the cream, and taste for salt and pepper.

Or, to serve later, remove from heat and refrigerate. Just before serving, heat the soup to just under a simmer, and stir in the cream, salt and pepper. Serve the soup piping hot.

### Ingredients

- ½ pound kielbasa sausage
- 2 tbsp olive oil
- 2 cups chopped leeks (about 4 medium leeks)
- ½ tsp salt, or to taste
- 8 medium kale leaves
- 2 pounds red-skinned potatoes, cut into cubes
- 2 cloves garlic, peeled and grated or pressed
- ½ tsp minced fresh thyme
- 2 bay leaves
- 2 tbsp chopped fresh sage
- Freshly ground black pepper
- ½ cup heavy cream



### DIG DEEPER!

Learn even more about garlic cultivation in "How to Grow Great Garlic" at <http://goo.gl/iDH3yb>, and about garlic, potatoes and many other vegetables in our Crops at a Glance Guide at [www.MotherEarthNews.com/Crops-At-A-Glance](http://www.MotherEarthNews.com/Crops-At-A-Glance).



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# Prune for Small-Space FRUIT TREES

This revolutionary pruning method will enable you to grow any type and variety of fruit in small spaces. Never settle for an apple you don't adore or a peach you can't reach.

By Ann Ralph

Many fruit trees—including semidwarf varieties—can easily grow to 15 feet and taller. Anyone who has tried to manage one of these large trees in a backyard will instantly appreciate the value of small fruit trees: They require less space, are easy to care for, and produce fruit in manageable quantities. Growing compact trees allows you to tuck more varieties of fruit into corners of your property or a small orchard, and means you can choose those varieties by flavor and climate adaptability rather than by tree size. Nearly any standard and semidwarf

tree—from pears, peaches and plums to apples and apricots—can be trained to stay much more compact.

The pruning treatment outlined in this article will create an appreciably smaller fruit tree than what you're used to—as small as most dwarf trees (see “Why Not Choose a Dwarf Fruit Tree?” on Page 26). Here's the key to this little-known technique: Fruit trees' reaction to pruning is dependent on the season in which the cuts are made. The trees' response is determined by whether the tree is actively growing (spring), gathering nutrients (early summer), preparing for dormancy (late summer), or fully dormant (fall and winter). Keep this cycle in mind when wielding your shears.





A knee-high heading prune (1) when planting a dormant tree is critical for size management. For the optional second cut, choose the best scaffold (2) or simply remove any duplicate buds on the same node (3).



## Dormancy and the First Cut

The first step to growing a small fruit tree is to make a hard heading cut (a cut that removes the growing tip) when planting. While such a cut may seem extreme, your planting job will only be complete when you've lopped off the top two-thirds of your new tree. This pruning cut is critical because it will create a low scaffold (the primary limbs that make up the canopy of a tree), and making this cut during dormancy will give the tree strength and resilience, which is especially crucial for heavy stone fruits. Most importantly, it will help keep the canopy of the mature tree within arm's reach.

Here's how to handle the first cut. As winter comes to an end, and the ground is workable for planting, buy a dormant bareroot tree that's about as big around as your thumb. Plant the tree as soon as possible. Choose a bud at knee-height (about 18 inches from the ground), and make a clean, 45-degree cut that angles away from the bud (see Photo 1). Cut close enough to the bud so it can heal cleanly in a natural line, but not so close that you cut into the bud itself. Several buds should remain between the cut and the graft—the knobby place low on the trunk where the scion (the graft that determines fruit variety) meets the rootstock. A knee-high prune is reasonable for almost all fruit trees, but peaches and nec-

tarines will sprout more reliably if you cut just above a nurse limb (a branch left to absorb the tree's spring energy and encourage sprouting). A young tree will probably be a 5- to 6-foot whip at the nursery, so in most cases you'll remove more than you'll leave behind. Your beautiful sapling will now be a knee-high stick.

Granted, this cut sounds harsh. Do it anyway. The compact structure of the tree to come will begin to develop as a consequence. Heading your tree while it's still dormant will take advantage of nutrients stored in the roots, and vigorous growth and branching will occur in spring, when the plant directs its energy to the remaining buds—the perfect combination of conditions to get a small fruit tree off to a strong start. Your initial cut will awaken the buds below, and they will eventually develop into new limbs, each with a growing tip of its own. The resulting open-center tree will be shorter, stronger, easier to care for, and far more usefully fruitful.

## Spring: A Balanced Beginning

After the first buds start to break in early spring, examine the spacing of the branches and decide if you like the arrangement of the top buds. If not, simply prune lower to a place where the





In summer, envision the future: Remove competing branches (4), head remaining scaffold limbs by about 50 percent, and prune for balance (5).

configuration of leafing buds suits you (see Photo 2). This place will eventually become the crotch of the tree. The lower the crotch, the easier it will be to keep the tree small. The earlier in the season you make this cut, the more vigorously new limbs will grow.

A young tree with a stem thicker than three-quarters of an inch may have a hard time pushing buds. In this case, make the first dormant cut where the caliper (width of the stem) is thumb-sized, then make a second cut lower as soon as buds begin to develop. After the sprouts get going, you can cut the scaffold as low as you prefer.

Revisit the tree once more in early spring just as sprouts reach 1 or 2 inches long, before woody branches begin to form. Gently pinch off all but one bud where multiple sprouts grow on a single node (see Photo 3).

## A Summary of the First Year

- Prune a dormant, thumb-thick sapling about knee-high, or 18 inches from the ground, when you plant in late winter.
- After buds begin to break the first spring, choose your scaffold. Pinch off all extraneous buds or prune a little lower to a height where the configuration of leafing buds suits you.
- Near the summer solstice, prune to slow growth and begin to shape your scaffold. Remove any redundant branches and make heading cuts.
- In winter, prune to open the interior of the tree and form a well-balanced shape. Remove dead or diseased material.

foliage. Solstice pruning will remove some of those resources and reduce late season root growth. In other words, summer pruning will slow a tree down, a desirable result for compact fruit trees. While peaches, plums and apricots pruned in fall and winter—the traditional pruning season—can grow as much as 8 feet the following spring, the same pruning cuts made in summer will yield growth of only 1 foot or so. Cuts made while a tree is actively growing will heal quickly, too.

In a perfect world, a young tree would have three or four branches evenly spaced around its trunk. In the real world, branches grow anywhere and anyhow they please. The key to pruning is to envision the future: Consider the placement of the fully grown limbs in relation to one another. You may have too many options. You may have an open area with no

## Summer: Build Your Scaffold

In spring and early summer, deciduous fruit trees aggressively expend their energy reserves as they bloom and leaf out. This is when trees are in the mood to grow, and grow they will, often at an alarming rate.

By the time of the solstice in late June, a tree's resources will have migrated from the roots and trunk to be stored primarily in the

branching. You may be tempted to let nature take its course, but leaving too many branches will prevent sunlight from penetrating the interior of the tree. Remove competing branches to create space (see Photo 4). An ideal branch angles upward at 45 degrees. If you want to keep a vertical branch, consider a heading cut to encourage horizontal growth, or hang weights on the branch to direct its growth downward.





Compact trees produce nicely sized fruits in manageable abundance.

After removing extraneous branches, cut remaining scaffold branches back by at least half (see Photo 5), to a bud that faces the direction you want the branch to grow. In the case of aggressive growers, such as apricot and plum trees, feel free to prune by two-thirds. Remove any suckers growing from the lowest part of the trunk or the base of the tree.

The earlier in summer you prune, the greater your size-control effects. By late summer, nutrients collected by the leaves will have already begun to move into the trunk and roots. A tree begins the shift into dormancy as early as July.

## Winter: Architecture

Winter will be the best time to make structural and aesthetic decisions because your tree will be bare. The dormant season will also be a good time to remove any limbs that just don't look quite right—those that are too horizontal, grow into a fence, or branch

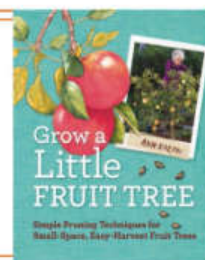
out over a path. You'll want to remove what Portland, Oregon, pruner John Iott calls “The Three Ds”—the dead, the diseased and the disoriented. Open up the interior with a few well-considered cuts. Observe the growth pattern of the tree, and prune to enhance its natural grace.

Make heading cuts in winter only if you want an enthusiastic response—when you're trying to develop the first low scaffold branches, or when you're trying to rejuvenate an older tree. Prune heavily in winter only if a tree has stalled, if pruning has been neglected and needs correction, or if you were too timid last time and want to generate some better choices this time around. The tree will outgrow the pruning with the full force of its reserves.

In subsequent years, just keep pruning: Make architectural decisions in winter and take height down around the summer solstice. When fruit is about the size of the end of your thumb, thin clusters down to a single fruit. Depending on the variety, you may harvest a few fruits by the third year and a few dozen fruits by the fourth.

How should you choose what to keep and what to prune? Ask yourself what seems best, listen to your instincts, and cut something out. The tree will create new choices and you can always make adjustments next season. 🌳

This article was adapted with the permission of Storey Publishing from *Grow a Little Fruit Tree* by Ann Ralph (available on Page 65 at a 25 percent discount until Nov. 30, 2015). Ralph, a fruit tree specialist with 20 years of nursery experience, gives pruning classes in the San Francisco Bay Area.



SAXON HOLY/PHOTO BOTANIC; BOTTOM: MARION BRENNER

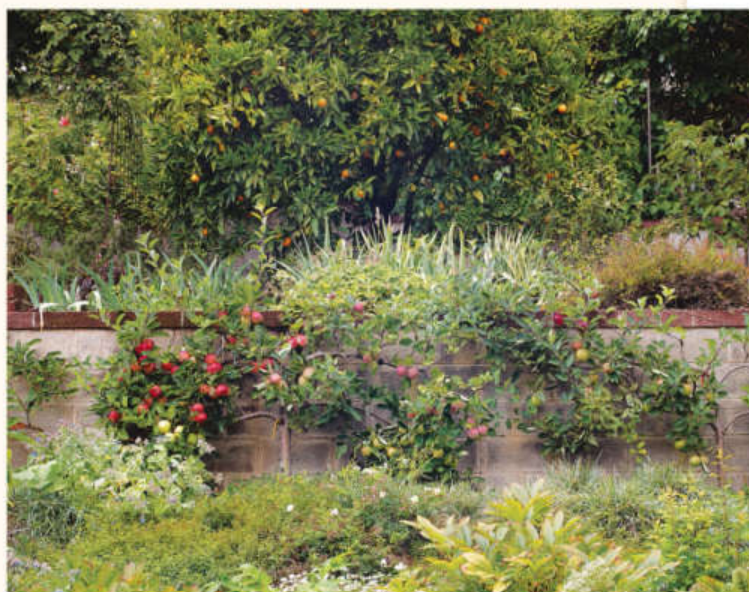
## Why Not Choose a Dwarf Fruit Tree?

**Genetic dwarf** fruit trees have their short stature bred into their genetic makeup. Genetic dwarfs aren't grafted; they grow on their own roots. On average, they stay between 6 and 8 feet tall, but are known to be less vigorous and have a shorter lifespan. When a fruit tree is bred for one quality, such as size, then other traits, such as fruit flavor, climate adaptability and overall vitality, become necessarily secondary. By selecting for size, you will miss out on the tastiest varieties.

Some fruit trees are available grafted on **ultra-dwarfing rootstocks**. These trees stay quite small, a petite 4 to 6 feet, but because of their extremely small root systems, ultra-dwarfing rootstocks present many of the same problems genetic dwarfs do in terms of short lifespan and overall plant health.

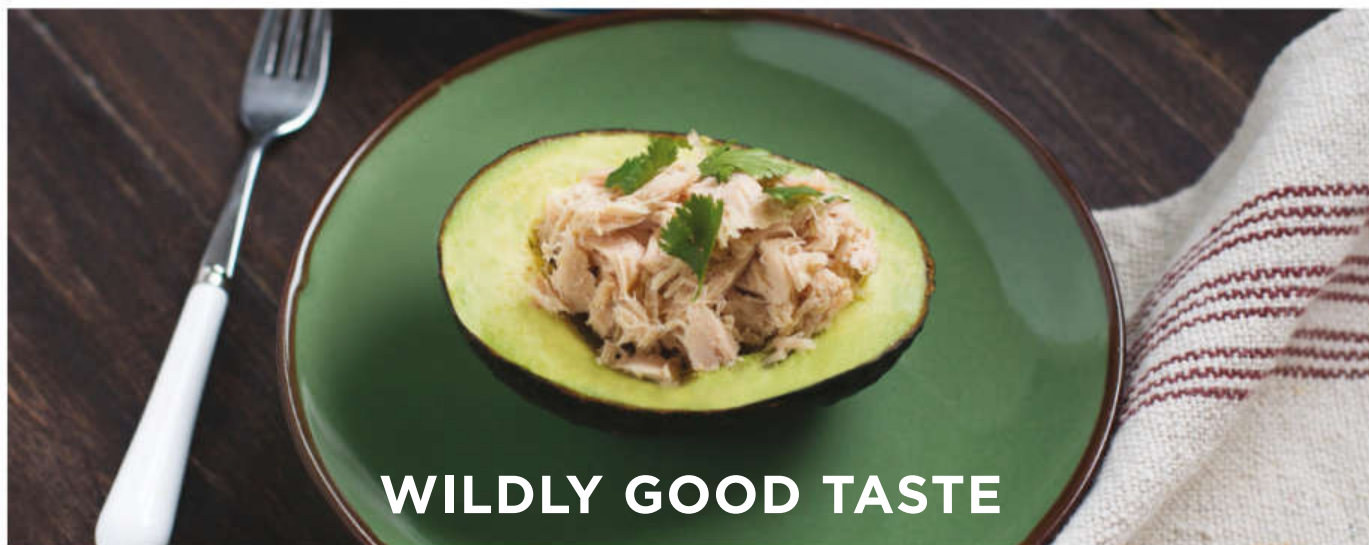
Most nurseries offer fruit trees grafted onto **semidwarfing rootstocks**. People seek these out with reasonable expectations of smallish trees, but semidwarf only means “smaller than standard.” If a full-sized fruit tree is 30 feet tall, then a semidwarf might grow to be as tall as 25 feet.

If you want a broad variety of choices, opt for a standard or semidwarf variety. The regular and strategic pruning described in this article is the best way to limit the size of a fruit tree.



You don't need to buy special rootstock to keep a tree small: Strategic pruning, like that used to manage this espalier apple tree, is enough.





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Circle #61; see card pg 81

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Circle #55; see card pg 81





Incorporate a wide, shallow ledge into your pond design.



If you use a liner, protect it with a carpet underlayment.



Place rocks and pebbles to support water-cleaning microbes.



# DIY Natural BACKYARD POND

Learn how to build a beautiful pond that stays clean and algae-free without the use of pumps, filters or chemicals.

By Robert Pavlis

**W**ater, soil, plants and animals live together in a harmonious balance in a natural pond. No one needs to scoop out algae. The water doesn't need pumps and filters to stay clean and oxygenated, and required maintenance is minimal. Years ago, I


dreamed of having such a backyard pond, but everything I read claimed that pumps, filters, chemicals and constant care would be necessary. So, I set out to prove the experts wrong.

## Going Natural

In a conventional backyard pond design, algae levels are controlled by adding

ROBERT PAVLIS (4)





Plants and wildlife thrive in the author's southern Ontario pond, where mechanical systems and chemicals are unnecessary.

chemicals and using a mechanical filter and a circulating pump that cost up to several hundred dollars. These filtering systems are essential because a standard design doesn't provide a hospitable environment for the beneficial microorganisms that would otherwise keep the water clean. I have found that by changing the design so the pond itself becomes the filter, you can eliminate the need for such systems.

This article will focus on how to create a low-maintenance, *natural* pond in your backyard by applying these principles:

- Provide surfaces for beneficial microorganisms to grow.
- Prepare plenty of space for plants.
- Restrict sunlight from the surface of the water to reduce algae growth.

**Room to grow.** Insects, frogs, fish and other living creatures add organic matter to a pond, as do pond plants and nearby shrubs and trees. This organic material would build up and overwhelm the water were it not for the pond's secret weapon: microorganisms. These organisms are everywhere—in soil and on rocks and plants—and they feed on organic matter. The more surfaces there are to support microbes, the cleaner the water will be.

To use microbes to your advantage in your pond, plan for half of its surface area to consist of a shallow ledge, about 8 inches deep, around the pool's perimeter. Place a ring of large stones along the inside edge of the ledge, closest to the deeper water. Then, position pebbles (about a half-

inch in diameter) on the rest of the ledge. The larger stones will prevent the smaller ones from rolling to the bottom of the pond, as shown in the illustration on Page 30. The surfaces of the small stones will be the perfect places for microorganisms to grow and become your pond's filter. In no time at all, the stones will become slimy, demonstrating that microorganisms are prospering and cleaning the water.

**Plenty of plants.** If nutrient levels become too high, algae can quickly take over a pond and choke out everything else. The secret to maintaining an algae-free pond without using a pump, filter and chemicals is to control nutrient levels—and the best way to do so is to have lots of plants growing in the water to out-compete the algae.



A shallow planting ledge takes up about half the pond's surface area.

Water lilies inhibit algae by blocking sunlight and consuming nutrients.



Rocks on the ledge help anchor plants while also fostering microorganisms that filter the water.

A beach with a sand or pebble bottom makes it easier for wildlife to take a drink.

To create a balanced environment in your pond, plant the ledge with “marginal” water plants that will thrive in the bog-like conditions at the edge, or margin, of a water garden. You want the marginal plants to take in nutrients from pond water, so don’t plant them in soil or pots. Simply set them among the small stones on the ledge, and secure the roots with a larger stone. The plants’ new roots will soon anchor them to the ledge. Good plants for shallow water include arrow arum, pickerel rush, water iris and cattail (see “Perfect Pond Plants,” opposite). Don’t introduce the highly invasive yellow flag iris or any other plant that’s a problem in your area.

**Limit light.** An additional way to inhibit algae is to keep the water’s internal light levels low by covering about 50 percent of its surface area with plants. Water lilies are perfect for this purpose because their leaves provide a lot of shade, and their roots take up excess nutrients that algae would otherwise thrive on. For small ponds, select water lilies with smaller leaves, because big varieties can quickly overpower an area.

Different types of water lilies prefer different water depths, but most will be happy in the deepest part of your pond, either sitting directly on the bottom or raised up in pots. These plants don’t need

soil, so plant water lily roots in pots filled only with stones. Simply lower the pots into the pond, and nature will do the rest.

## Pond Pointers

The size of your natural pond won’t be critical to its success, but you’ll probably wish you’d made it bigger. A depth of at least 3 feet will help fish overwinter in cold climates (Zones 4 to 6), while 2 feet will be sufficient in warmer areas.

Consider including a shallow beach-like area with a sand or pebble bottom along the pond’s edge. This will make it easier for wildlife to take a drink and provide a way for an animal to escape if it falls into the



## 5 Secrets to Success

- 1 Keep nutrient levels low in your natural backyard pond by placing lots of small stones and pebbles on the ledge to provide surfaces to support microbes, which will break down organic matter.
- 2 Include plenty of water plants on the ledge to feed on decaying organic matter. Grow water lilies to shade the surface and inhibit algae.
- 3 Keep the fish population low and don’t add fish food.
- 4 Don’t clean the rocks or the liner.
- 5 Sit back and relax while Mother Nature does the work.

**Your natural pond won’t need a pump or filter because the many small rocks on the ledge will harbor beneficial microbes that keep the water clean.**





Pickerel rush



Iris



Water lily



Cattail



Umbrella plant

## Perfect Pond Plants

Arrow arum (*Peltandra virginica*)  
 Broadleaf arrowhead (*Sagittaria latifolia*)  
 Bulrush (*Scirpus*)  
 Cattail (*Typha angustifolia* and *T. latifolia*)  
 Corkscrew rush (*Juncus effusus spiralis*)  
 Hardy water canna (*Thalia dealbata*)  
 Pickerel rush (*Pontederia cordata*)  
 Umbrella plant (*Darmera peltata*)  
 Water iris (*Iris laevigata* and *I. hexagonae*)  
 Water lily (*Nymphaea*)

water. Plus, a beach will make the pond even more visually appealing.

Not all ponds require a liner. How can you learn whether you'll need one? Dig a trial hole and fill it with water. If the water stays at an acceptable level in the hole for several days, you don't need a liner. The design of a natural garden pond with or without a liner will be exactly the same.

If you do need to use a pond liner, usually made of plastic or rubber, you should always add an underlayment to protect against punctures. I prefer synthetic carpet squares or scraps because they're thicker than flimsy commercial underlayments and will last just as long—and you can get them free. Consider an overlayment, too. Virtually no experts recommend using an overlayment, even though you could easily damage the liner by stepping on one of the stones that ring your pond. I recommend adding an overlay of carpet wherever you plan to place large stones—on the planting ledge, for example. This will protect the liner from both above and below.

Frogs usually appear soon after the pond is filled, and will take care of mosquitoes. If you live in an area without frogs, consider adding fish to control the mosquito population. Koi are beautiful fish, but they dig up plants and produce a lot of waste. Goldfish are a better option for a natural backyard pond. I add a dozen goldfish to my pond each spring if the previous tenants didn't make it through winter. As a rule of thumb, add one goldfish for every

10 square feet of water surface area. Don't feed the fish, because you want them to eat algae and other pond life.

A pond's sides can collapse if the soil around the edge and under the liner gets too wet. What will happen if a heavy rain over-fills the pond, or if you forget to turn off the garden hose while filling it? Design the pond with a specific low spot to allow for overflow, and add some extra liner in that area to direct the water where you want it to go.

Online sources and pond books are full of advice on maintaining correct water chemistry. Ignore them! Don't adjust pH or nitrate levels, and don't add chemicals for algae control. Natural ponds don't need any of this.

## A Theory That Holds Water

Seven years ago, I tested my theories by building a pond measuring 20 by 30 feet. Today, water plants thrive on a ledge that covers about half the pond, and water lilies cover most of the remaining surface area (see photo, Page 29). There's no pump or filter. Wind and jumping frogs are the only things that move the surface of the water. I've never cleaned out the bottom of the pond, and I've never changed the water (although I do top it off once a year to compensate for a lack of rain).

In the early years, as my plants were getting established, I did have string algae, but it declined as the water plants filled in. For the past two years, my pond has been virtually algae-free. In fact, the water is so clear that I can see 4 feet deep, to the bottom of the deepest section.

Frogs breed like crazy in my backyard pond. Deer, raccoons and an opossum drop by for regular drinks. Dragonflies and all kinds of insects love the pond. Two types of native bulrushes have seeded themselves on the planting ledge. Plants and microorganisms provide all the maintenance and filtering. My natural pond is living proof that you can build a low-maintenance, less expensive, wildlife-friendly water feature on your property. 🐸

## RESOURCES

These websites cover the basics of pond planning and construction:

**The Water Garden:** <http://goo.gl/zpdu74>

**DIY Network:** <http://goo.gl/w8YJf5>

**Laguna:** <http://goo.gl/6znwLh>

Robert Pavlis is a plantaholic who's been gardening in southern Ontario for more than 30 years. A background in biochemistry has helped him sleuth out gardening facts, which he promotes on his website, [www.GardenMyths.com](http://www.GardenMyths.com).



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# 10 Fascinating Facts About EDIBLE PLANTS

Dig into the intriguing world of plant science to harvest knowledge that you can apply to cultivate a bountiful, successful garden.

By Rosalind Creasy

Plant breeders, seed companies, professional farmers and veteran gardeners possess specialized knowledge that would greatly benefit the average home gardener. I've spent countless hours working with such specialists during my more than 30 years as a landscape designer, and I have grown numerous edibles in my trial garden. Thanks to this research, I've come up with my Top 10 List of edible-plant facts that will increase your plant-growing expertise. Some cover plant basics, some touch on scientific technicalities, and some are crop-specific, but all will help you grow an even better garden next season.

## 1 Nitrogen Needs

Nitrogen is as important to plants as protein is to animals. Nitrogen-starved plants look paler than normal, and their lower leaves start to yellow, which is especially evident on squash, peppers, broccoli and other heavy-feeding annuals. When I mention that a plant needs nitrogen to a gardener, I often hear, "But I followed the directions on the fertilizer package!" The dosage suggested on the package is only an average, however; many factors influence how much nitrogen you should actually apply. Your soil may be sandy and allow nutrients to quickly leach away, in which case you should be diligent about building soil quality by adding organic matter. Or, perhaps the bag of chicken manure you applied was sitting at the nursery too long and the nitrogen volatilized into the air before you bought it. Or, maybe a particular plant variety is an especially heavy feeder.





That said, some gardeners over-fertilize, which can be just as damaging as not applying enough. Use your eyes as your guide to judge the health of your crops, and regard the directions on any fertilizer package as a starting point, but not a set rule.

## ② Seeds vs. Transplants

The plants at any garden center entice growers to head home with a full load of transplants. But, just because one *can* buy peas, dill and cucumbers as transplants, or start them indoors at home, doesn't mean it's necessary—seeds of most plants can be sown directly in the garden. The \$3 you'd spend on one dill seedling, for example, would be better spent on a packet of 50 dill seeds.

I recommend shelling out money for transplants—or spending time to start seeds early indoors—only when you need to give certain crops a head start on the weather or to make plant spacing easier. In most regions, the only plants that really



**You can sow most crops, including squash, directly in the garden, which will save you money at the garden center.**

need the extra growing time are the longer-season crops, including tomatoes. You may also choose to transplant brassicas, such as broccoli, to take advantage of windows of cool weather. Most other crops will grow successfully if you sow seed directly outdoors. Many crops will actually produce better when direct-sown—particularly root crops. Follow the timing directions on your seed packets for best results.

When you do decide to purchase transplants, choose strong plants that aren't too much bigger than the pot they're in. Garden centers like to sell bigger plants at higher prices, but these plants are often stressed and root-bound, and they usually won't grow as well after transplanting as smaller, younger plants would.

## ③ Counting the Hours

Some edible plants are referred to as “day-length sensitive,” although day length is a misnomer because these plants are actually sensitive to the number of hours of darkness.

Some crops are short-day plants, typically those grown in spring and fall, and some crops are long-day plants, which require more than 12 hours of light to flower. Day-neutral plants flower regardless of day length. For general information on how day length affects many different plants, and to determine the number of sunny hours at your garden's latitude, refer to <http://goo.gl/xHteBR>.





A good example: Most gardeners plant cilantro in spring, and are frustrated when it goes to seed just six weeks later. Cilantro is a short-day plant that needs cool weather. Instead of trying to keep it going through longer summer days (unless you're growing it for coriander seeds), plant it in late summer and it will grow until struck down by a hard frost. For a cilantro-flavored summer herb, try *papalo*, which is a Mexican warm-season annual with a related flavor (see photo, Page 34).

## 4 Basic Botany Vocab

Many gardeners are confused about common plant and seed terms, such as genetically modified (GM), hybrid and open-pollinated—and the media often gets these wrong, too. So, let's review.

The two main seed types are hybrids and open-pollinated. The open-pollinated varieties are either **self-pollinating** or **cross-pollinating**; in reality, many plants do a little of both. The flowers on self-pollinating plants, such as tomatoes, each contain male and female parts and can pollinate themselves. Other plants, including squash and cucumbers, produce male and female flowers that cross-pollinate. To produce a crop, insect pollinators, wind or gardeners must transfer pollen from a male flower to the pistil of a female flower.

To save seed, you'll want to grow **open-pollinated varieties**, which can duplicate themselves "true to type" (the offspring will be similar to the parent). Often noted as "OP" in seed catalogs, they offer a long-term advantage: If you save seed for a number of years, the variety will become more acclimated to your garden's conditions. Except for a few edibles, such as potatoes and apples, heirloom varieties are open-pollinated.

If you grow multiple open-pollinated varieties of a cross-pollinating crop, you'll need to separate the varieties by distance or barriers; otherwise, the pollen will mix and the resulting seed will produce a combination of the varieties. Say you have two OP zucchini varieties planted next to one another. You'll need to cover them separately and hand-pollinate the flowers for the seed to produce true-to-type offspring. If you don't plan to save seed, then don't worry about this detail.



Large heirloom tomatoes with a lot of sections, called "ovaries," are less tolerant of temperatures outside of a specific range than simple, round varieties usually are.

**Hybrid varieties** are crosses between two closely related plants or animals (think of breeding a horse with a donkey to get a mule). Seed breeders select special lines and then purposely cross them to combine the best traits of the two lines. Identified in catalogs as "Hybrid" or "F1," these varieties can offer valuable characteristics, including disease resistance, high yields or uniform ripening. Seeds from hybrids will not grow true to type, so you can't save seed from these plants.

Open-pollinated,  
heirloom, hybrid, and  
GMO are terms with  
distinct definitions.

**Genetically modified (GM) varieties** are created in a lab via a complex process wherein selected genes from any organism with desirable traits are inserted into a plant, whether related or not. For example, scientists take genes from the bacteria Bt (*Bacillus thuringiensis*) and incorporate them into corn plants to make these varieties toxic to common corn pests. The plant's DNA is altered in ways that couldn't naturally occur, and the Bt pesticide is produced in every cell of the plant, which means that humans consume it when they eat the corn. The cost of de-

velopment has limited GM plants mainly to large-scale agriculture. Most processed foods contain GM soy, corn or sugar. GM sweet corn, papaya and summer squash are in supermarkets, and the USDA has approved GM potatoes and apples.

## 5 Some Like It Hot, Some Do Not

Edible plants are generally classified as either warm- or cool-season crops. How can you know which crops are which? Here are two simplified rules to help: If you eat the tuber, root, leaf or flower bud, the vegetable usually prefers cool conditions. If you eat the fruit or the seeds, the vegetable needs warm conditions to produce well. So, carrots (roots), spinach (leaves), and broccoli (buds) are all cool-season crops. Tomatoes (fruit), and beans (seeds) are warm-season vegetables. Of course, there are exceptions: Peas (seeds) are cool-weather plants, and sweet potatoes (tubers) need heat. These two rules can still be a guide, though, especially when names are deceiving—for example, winter squash (fruit) needs a long summer growing season.

## 6 Gentle Tomato Giants

Garden-catalog writers, chefs and home growers rave about the flavor of many large heirloom tomatoes, such as 'Brandywine.' Most of these large tomatoes have many sections, or "ovaries" (often eight to 12 per fruit). For the tomato to properly develop, each ovary needs to be fertilized.





If growing tomatoes in stressful conditions, such as excess heat that causes blossoms to drop, try a grafted plant, which will have a notch in its stem where the graft and rootstock meet (right).

Temperature plays a major role—day-time temps need to be between 65 and 90 degrees Fahrenheit, with humid nights hovering between 60 and 70 degrees. At temperatures outside of this range, pollen may be less vigorous and blossoms could abort (known as “blossom drop”).

While nearly all tomato varieties will suffer outside of this optimal range, certain varieties, which are generally smaller and produce faster, can handle weather fluctuations better than larger, multi-ovaryed heirlooms. If your climate doesn't fall in the preferred range, you may have more success with heirlooms that have a simple, round shape, which indicates that the fruits have only one ovary and pollination will be more reliable. Consider any cherry types, or these varieties: ‘Black from Tula,’ ‘Black Plum,’ ‘Black Prince,’ ‘Emmy,’ ‘Siberian,’ ‘Stupice’ and ‘Vorlon.’

## 7 Determining Tomato Flavor

“Determinate” and “indeterminate” are terms used to describe a tomato variety's growth habit—but many gardeners don't realize these categories relate to flavor, too. Most determinate tomato plants have fewer leaves per fruit than their sprawling indeterminate cousins. These compact determinate plants have the advantage of growing better in containers and producing all of their harvest at once, which makes them great for processing. But, don't expect them to be as flavorful

as the vining indeterminate varieties that have more leaves to convert sunlight into sugars and, thus, develop more intense, complex flavors.

## 8 You Can Graft Veggies

Grafted edible plants start with a vigorous, disease-resistant rootstock to which a named variety is grafted, as is the case with most fruit trees. The latest research and my experience indicate that grafted vegetables are most advantageous if you want to grow certain edible plants, such as tomatoes or eggplants, but your garden provides stressful conditions, such as limited water, poor soil or disease pressure. If that's the case for you, locate the best grafted plant for your conditions using MOTHER'S Seed and Plant Finder ([www.MotherEarthNews.com/Custom-Seed-Search](http://www.MotherEarthNews.com/Custom-Seed-Search)). Grafted plants are expensive, but you can research the subject, buy seeds of vigorous rootstocks, and try grafting your own—learn how at <http://goo.gl/LmgXqs>. Johnny's Selected Seeds, Harris Seeds and Territorial Seed Co. all offer seeds of tomatoes that make good rootstock. Varieties that are good candidates for grafting onto rootstock are ‘Brandywine,’ ‘Cherokee Purple,’ ‘Mortgage Lifter’ and ‘San Marzano.’

## 9 Blueberries Are Anything but Basic

Blueberries are a delicious and colorful addition to any garden, but you can't plant them just anywhere and expect them to

thrive. Start by choosing the right variety for your climate, and then consider your soil. Blueberries need acidic soil (pH 4.5 to 5.5). After planting, you must keep the soil acidic, because blueberry roots don't absorb nutrients well in neutral or alkaline (also known as “basic”) soil.

Test your soil often with litmus paper from a nursery or aquarium shop, and adjust it as needed using sulfur. A successful blueberry farmer told me that if you use drip irrigation, avoid ooze emitters; instead, use small spray emitters to keep the soil evenly damp, which makes it easier to keep the soil acidic. His advice has worked well for me. If you live in an area with alkaline soil, your irrigation water may be alkaline, too—all the more reason to continue to monitor your soil's pH level.

## 10 Herb Flavor Families

Most folks think of an herb, such as oregano, as a specific plant. Yet some, such as Mexican oregano and Cuban oregano, are in entirely different plant families but taste quite similar to the familiar Italian herb. What we call “herbs” are really flavors and, more specifically, the myriad oils that produce those flavors.

While we can't assign a specific herb's flavor to any single oil, the same oils show up in a number of herbs and give the plants similar flavor overtones. For example, geraniol, which lends a citrus flavor to lemon thyme, is also a component of lemon balm. The licorice-flavored oil estragole is found in both French tarragon and anise hyssop. If you want to unearth potential flavor matches, browse this graphic representation of the organic compounds in several herbs and spices at <http://goo.gl/MGMYXc>.

With these 10 facts about edible plants in your repertoire, may your gardening be even more productive, beautiful and fun. *Bon appétit!* 🍴

Ros Creasy has been researching and gathering expert gardening and cooking information for more than 30 years—taking stunning photos all the while. Find her books on Page 65.





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# THE AMERICAN GUINEA HOG

## *A Petite Pig with Big Benefits*

A perfect size for smaller homesteads, this amiable heritage breed is easy to manage and provides choice meat and lard.

By Jeannette Beranger

Few animals are as useful as pigs on the homestead. They have provided their owners with valuable lard to cook with and flavorful meat for the table for thousands of years. To many, they represented food security through lean times, because, prior to refrigeration, pigs served as an on-the-hoof food-storage system. Pigs can also perform a number of tasks around the farm. Their rooting behavior makes them natural rototillers, and they can help control unwanted species, such as snakes and rodents.

When deciding whether pigs will work for you, don't assume all breeds are similar. Hogs can grow into massive animals, with breeding boars tipping the scales at nearly 800 pounds, plus large sows with piglets can be dangerous for the inexperienced hand. Some breeds produce large amounts of meat (130 to 150 pounds per pig), which may be too much for a small family's needs. A small breed such as the American Guinea hog may be the best choice for many homesteads. One Guinea hog will yield 60 to 80 pounds of pork.

This rare and storied breed has a fascinating history. One theory suggests the American Guinea hog could have a close association to the Improved Essex hog, a small British breed now extinct in the United Kingdom. DNA analysis con-

ducted in 2014 by the Canadian Animal Genetic Resources Program, led by Dr. Yves Plante in collaboration with The Livestock Conservancy, found that the Guinea hog's genetics consistently cluster it with the Gloucestershire Old Spots pig. Because the Old Spots and the British Improved Essex share the Old English Pig and unimproved Berkshire in their foundation, these findings support the idea that our American Guinea hog is, in fact, descended from the British Improved Essex hog, which British farmers favored because it was hardy and could feed itself by foraging.

During the Guinea hog's heyday in the late 19th and early 20th centuries, most households were cooking with lard, and this breed produced it abundantly. As the use of lard diminished, so did the American Guinea hog's numbers.

The breed was fairly common in the South up until the 1940s. These pigs were mainly kept on small farms and were used for meat and lard production, cross-breeding, and as yard pigs to till the garden and keep snakes away.

By the 1990s, there were fewer than 100 Guinea hogs left in the United States, and it is now considered one of the rarest heritage hog breeds.

It is an easily managed, mild-mannered small pig breed that fattens well. These are great beginners' pigs, with sows typically reaching only 150 to 180 pounds if in good condition. Boars

grow to approximately 250 pounds, although some may be a bit larger. You can expect a butchering weight of approximately 120 to 150 pounds.

Home cooks will find pastured pork from American Guinea hogs to be rich enough in fat to stay succulent in cooking, whether in the high, dry heat of grilling and roasting or in the low-and-slow, moist heat of braising and barbecuing.

### Caring for a Guinea Hog

Guinea hogs are wonderfully adaptable to both cold and hot climates. During hot weather, provide ample water, shade and mud-bathing opportunities to keep the pigs comfortably cool. Move mud wallow locations every few weeks so algae and bacteria don't build up and the water doesn't become stagnant, which can be unhealthy for the pigs.

Hogs can handle cold weather—but not if they're wet. They need housing to keep them dry and out of the elements. Pigs particularly like deep straw bedding (6 to 12 inches or more) and will keep their bedding areas clean of feces and urine if they have ample room to roam. The shelter should be sufficient for all the pigs in your herd to fully stretch out, up to 10 square feet per hog.

Several options are available for fencing hog enclosures. The most effective way to keep a pig inside an



enclosure is to provide good food and a comfortable place to live. These essentials will prevent your pigs from wanting to escape. Effective physical barriers include welded metal hog panels secured to wooden or metal posts, which work as long as the pigs don't dig or push under the panels.

Electric fencing for pigs is another good option, given you provide proper training for the hogs. Introduce them to the "hot wire" with a solid barrier behind it, so when they touch the live wire for the first time, they will be more likely to back away from the physical barrier rather than try to push forward through the wire. Pigs are highly intelligent and need only one or two experiences with electric fencing before they learn to avoid it. You'll not need the solid barrier behind the hot wire after the pigs learn to respect the electric barrier. The ideal enclosure replaces the solid barrier used in training with a fence of hog panels and a line of hot wire inside the fence about 6 inches off the ground. This will deter hogs from pushing on the panels or digging under them, and is also best for enclosing piglets.

If using electric fencing alone, place one strand 6 inches off the ground, one at 12 inches and another at 18 inches. And beware: Hogs will always know if the electricity goes out before you do. Solar chargers may be a better option than hard-wired units in areas prone to power outages.



**These Guinea piglets are great for beginner swineherds—the breed is gregarious and docile.**

## Space, Feed and Water Requirements

Pigs are kept in two types of outdoor free-range enclosures—dry lots and pasture. Dry lots are open areas where groups of pigs can range together freely. With this setup, you'll need at least 150 square feet per animal. Include dry areas with sure footing, plenty of shade during summer heat, and shelter from the cold.

When managing hogs on pasture, you'll need a minimum of 2 acres per pig if you don't practice rotational grazing, but you can manage up to 10 pigs per acre with good rotational grazing practices. Much depends on your location and the quality of your pasture.

Pigs eat roughly 4 percent of their live weight daily—for instance, a

150-pound pig will require 5 to 6 pounds of high-calorie feed each day. This could include kitchen scraps, restaurant waste, purchased grain or outdated milk, for example. Even with the finest pastures, your animals will need this supplemental feed; with high-quality forage, however, you can reduce supplemental feed by up to 10 percent.

Depending on your herd size, you have two options for purchasing grain: If you have a small herd, stick with bagged food; with a larger herd, bulk purchases will be more cost-effective. Feed should be used within six months to maintain optimal nutrition.

Each Guinea hog will require 3 to 5 gallons of clean, fresh water daily. Lactating sows may require an additional 1 to 2 gallons per day. Automatic waterers, especially those that are frost-resistant, are a good option for providing ample, readily available clean water during both hot and cold weather, but aren't required.

The biggest challenge with raising the American Guinea hog is weight control—they put on weight more easily than other breeds. Overly heavy pigs will have fertility issues and eventually will have joint problems and lameness. Monitoring food intake will be very important to keep your pigs healthy and content.

The Guinea is a social animal and will welcome a little company and a good back-scratching every day.



**Shelter for your Guinea hogs needn't be fancy, especially if you plan to move the pigs frequently.**



## Getting This Little Piggy to Market

Keeping stress at a minimum is important when moving your pigs, and it's rarely productive to try to make a pig do something it doesn't want to do. If you're moving pigs from one pen to an adjacent pen, food is often a successful motivator. For longer distances, desensitize the pigs to the shipping crate or trailer that you'll use to move them ahead of time. Start by placing it in the enclosure with the pigs and feed them inside of it daily. Over several days or a week's time, the pigs will learn to become comfortable in that space and, eventually, you can close the door behind them. If you do need to urge them forward or push them into an area, use a baffle board so that your legs are protected from potential bites or accidental grazing by tusks.

Guinea hogs are making a comeback, thanks to the increasing demand for pastured pork and the rising popularity of charcuterie, or cured meats, such as ham, bacon and salami, as well as specialty cuts, such as lomo and prosciutto. Chef Craig Deihl (pictured above) of Cypress restaurant in Charleston, S.C.,



**Chef Craig Deihl of Cypress restaurant in Charleston, South Carolina, compares a Guinea ham (left) and a Tamworth ham. Cuts from the Guinea hog may be just the right size for smaller families.**

and its fame has spread to restaurants throughout the South, from Georgia to Virginia.

While most meat processors will have no issues with these smaller hogs, it's wise to confer with your processor before you take your pig in for butchering. If you're interested in charcuterie, discuss this in advance with the processor, to be sure you'll receive caul fat and other nose-to-tail cuts from your animal, if you want them. Guinea hogs are small enough that, should you choose to have your animal returned to you whole or halved, further butchering can be finished in a home kitchen. 🌿

Jeannette Beranger, the research and technical programs manager at The Livestock Conservancy, has been a fan of the American Guinea hog ever since she kept her own herd.

## RESOURCES

If you think American Guinea hogs may be a good choice for your needs, find breeders, discover more about this breed, and learn about raising pigs in general from these sources.

### **The Livestock Conservancy**

[www.LivestockConservancy.org](http://www.LivestockConservancy.org)

### **American Guinea Hog Association**

[www.GuineaHogs.org](http://www.GuineaHogs.org)

BOOKS (available on Page 65)

***Butchering Poultry, Rabbit, Lamb, Goat and Pork*** by Adam Danforth

***Charcuterie*** by Michael Ruhlman and Brian Polcyn

***Homegrown Pork*** by Sue Weaver

***Plowing with Pigs*** by Oscar H. Will III and Karen K. Will

***Storey's Guide to Raising Pigs*** by Kelly Klover



**The compact, genial Guinea hog may bring your family pleasure as well as pork.**





# *Community* + *Self-Reliance* = THE GOOD LIFE

Neighbors discover strength and security as they embrace a *do-it-ourselves* approach to more sustainable communities. Here, we feature seven of these resilient, cooperative Homestead Hamlets as models for other neighborhoods.

By K.C. Compton

**T**he alienation and affluenza so prevalent in our society can sometimes seem overwhelming. Happily, we're aware of some amazing alternatives. As MOTHER's readers dig in and put their homesteading skills into practice, they

realize that the work of self-reliance often goes better in community—more DIO, “Do It Ourselves,” than DIY. Partnering with neighbors, friends, local governments and faith groups, they're applying self-reliant skills to create paradigm-changing approaches to community living. We're calling these communities “Homestead Hamlets,” a term that arose from an inspir-





ing article in our April/May 2014 issue about Hawley Hamlet in Lincoln, Nebraska. (Read the article at <http://goo.gl/nPZar5>, or watch a brief video about Hawley Hamlet's development at [www.MotherEarthNews.com/Hawley-Hamlet](http://www.MotherEarthNews.com/Hawley-Hamlet).)

In all of these groups, “community” is understood as more than congenial chatter over the potluck table. It involves sharing both burdens and benefits in practical, material ways. As society has grown increasingly fragmented, this sense of mutual aid can sometimes seem altogether lost in an impersonal world. The encouraging news is that the spirit of fellowship and connection is alive and well in communities throughout the country. The seven groups we’ve selected to feature as the 2015 Homestead Hamlets—the first group in our inaugural Hamlets feature—are doing their part to nudge our society toward lifestyles that are wiser, more eco-friendly and way more fun.

## Bryn Gweled Homesteads

Though Nelson and Kristin Arias had never heard the term “intentional community,” a bit of research revealed that was just what they were looking for. They found their community in Bryn Gweled Homesteads in Bucks County, Pennsylvania.

“We’d always talked about how cool it would be if people who cared about the same things could get together and create their own neighborhood,” Nelson says. “We’d lived in ‘neighborhoods’ where people literally never talked to each other. Then, Kristin found Bryn Gweled online and we were fascinated.”

Now celebrating its 75th year, Bryn Gweled (pronounced *Brin Guh-WELL-ed*) was formed by residents of a Philadelphia Quaker settlement house who pooled their resources to buy land together. Bryn Gweled is a Welsh term meaning “Hill of Vision,” and the founders’ dream was a community where each family could have enough land to create individual homesteads, with opportunities to enjoy outdoor recreation while working together for the common good. The community now comprises 75 families, each with a 99-year renewable lease on a 2-acre homestead, plus about 90 acres of shared land, some of it in permanent conservancy. Work parties maintain roads, a community center, a swimming pool, a soccer field, a community garden and woodland trails.

Susan Corson-Finnerty, who’s lived in Bryn Gweled for six years, says residents share a wide variety of resources. There’s the wood chipper and wood splitter co-op, a 15-family CSA that’s hired a farmer to grow food and teach gardening skills,





Pennsylvania's Bryn Gweled is one of the nation's oldest intentional communities, where helping others is a way of life, as with this "solar panel raising."

and groups that operate a food- and coffee-buying co-op and a monthly "freecycling" event.

"We have an online community Listserv that makes sharing resources and other kinds of help extremely easy," Corson-Finnerty says. "There's also a health and welfare committee that quietly keeps track of which households have a member with serious illness or injury, and provides meals, rides to the doctor, and other support for as long as the neighbor needs or wants them."

All community members—even those who inherit their homes—go through a thoughtful, deliberate process to join. Hans Peters' parents moved to Bryn Gweled in 1946, when he was 3 years old. After college, he left for 20 years, but returned and has been there ever since.

"Homesteading is part of the DNA here," he says, "along with the idea of living an Earth-centered life that's connected to the land. We are all involved to some degree in each other's lives. But there's also plenty of opportunity to be alone here, if you need solitude from time to time."

## Enright Ridge Urban Ecovillage

Located in Cincinnati's historic Price Hill district, Enright Ridge Urban Ecovillage faces challenges familiar to any older urban neighborhood. In June 2004, Jim and Eileen Schenk invited

several neighbors to consider pooling resources to strengthen the neighborhood's ability to deal with potential disruption from such sources as climate change or economic breakdown. Their grass-roots ecovillage was born that night.

The neighborhood had been hit hard by the recession, and changing demographics led to exodus, foreclosures and vacant properties. The newly organized ecovillagers began buying these blighted houses, and then rehabbing and selling them to new homeowners. The strategy succeeded, and the ecovillage, now at 110 households, may expand to another street because it lacks sufficient housing to meet the many requests from potential new members.

Though Enright Ridge's residents come from a variety of faith backgrounds, they share a similar spiritual approach: The Earth is sacred, and humanity's success depends on honoring that reverence in their daily lives. Residents promote sustainable living practices, tend rain gardens and forest gardens, plant trees, build walking trails through the woods, create shared rituals, and offer educational programs focusing on sustainability.

"We strongly believe in the need to revitalize our cities," Jim Schenk says. "For practical reasons, it makes sense for humans to stay clustered in a geographic area, but we need to lead ecologically sensitive lives there. The urban ecovillage is a good way to do this—using existing houses and infrastructure."



More than 110 households make up Cincinnati's Enright Ridge Ecovillage. Members often gather for play and work, from biking to building a cob oven.

NANCY SULLIVAN; BOTTOM LEFT: JESSICA GAITAN; TOP RIGHT: THOMAS FETTERMAN; TOP LEFT: BRADLEY BOWER





By organizing as a nonprofit, Enright Ridge has been able to secure funding to purchase and rehab foreclosed or badly dilapidated houses in the neighborhood. So far, in addition to the 110 households, they've fixed up 13 houses—making many energy-efficient upgrades. Some of the larger buildings were multifamily units that they've offered as rentals—a choice that has enabled younger and lower-income families to move in. The plan is to rebuild from within the neighborhood boundaries, one home at a time—and it's working.

Some members have hired a farmer to grow a variety of crops in backyards and vacant lots for a CSA program. He's moved to the ecovillage and helps residents grow their knowledge base beyond simply working a community garden. "People can buy into the CSA, trade their labor for shares, or volunteer their time to learn how to farm by working with 'their' farmer," Schenk says.

Ecovillage members hold two potlucks a week and invite neighbors. These events help develop friendships and strengthen community bonds. Children are free to play outdoors throughout the neighborhood, in backyards and in the woods around the ecovillage—an experience urban children seldom enjoy.

Based on their experience, members of Enright Ridge Ecovillage have written *Starting Your Urban CSA*, a free step-by-step guide that's available on their website. Schenk also says he's happy to consult with anyone who wants to get started with any aspect of creating an urban ecovillage. Contact him online at [www.EnrightEcoVillage.org](http://www.EnrightEcoVillage.org).

## Green Bridge Farm

Michael Maddox has been reading *MOTHER EARTH NEWS* since he was in high school, and has always wanted the lifestyle described in its pages. Now in his 60s, he's reached a point where not only can he bring that dream to fruition, but he can also share it with others.

His strong desire to "think globally, act locally" is why he decided to subdivide part of the farm that's been in his family since



**Michael Maddox and his wife, Annette, started Green Bridge Farm in Georgia in 2008. It now includes a log cabin, a farmhouse and this net-zero-energy home (top).**

1798. He received approval for his subdivision from the county zoning commission in 2008, and soon began selling 1.2- to 1.6-acre plots on 25 wooded acres in Effingham County, Georgia. Unlike many subdivisions where McMansions are the prevailing aesthetic, Green Bridge Farm sets maximum square footage and heights, and requires that 90 percent of each site remains wooded. The subdivision has an organic farm at its center.

"I had a career as a landscape supervisor for the city of Savannah," Maddox says. "I'd been working on this farm as a side project for several years, and creating this community was always a back-burner project. My wife, Annette, and I want our place to become an experimental station for sustainability, and eventually we want to create an educational center to help spread the word in this part of the country."





Removing fences between rundown houses in Davis, California, made way for the N Street Cohousing community, where hayrack bike rides and tree art help bring residents together.

A 4-acre community space in the center of the neighborhood features organic fruit trees and a large market garden, cultivated using biointensive methods. The garden overflows with vegetables Maddox sells at the local farmers market and through a “pick and pay” system on the farm. Part of the labor is compensated through a barter system: one hour of labor for a \$15 box of produce.

Aside from house size, covenants include a ban on overhead outdoor lighting and chain-link fencing, and an agreement that residents will use geothermal heating and cooling systems. Earthcraft or LEED certification for the homes is also encouraged, though not mandatory.

One of the first to buy a lot at Green Bridge Farm was Charles Davis, president of Earth Comfort, a company that specializes in geothermal systems and shallow irrigation water wells. Davis’ net-zero-energy home is a prefab design from Warren Buffet’s Clayton Homes, and features solar photovoltaic roof panels that generate energy for both the home and Davis’ Chevy Volt. Green Bridge’s

covenants make it a perfect location for tiny homes and small modular homes like Davis’, which would have trouble in traditional subdivisions that often don’t allow small dwellings.

Julian Urdaz and his wife, Sheena, met Maddox at his booth at the local farmers market and accepted his invitation to visit the farm. They’re now the community’s newest residents, renting a large yurt on the farm while they save to buy a lot and build a home. Having grown up in New York City, Urdaz says the idea that they’ll be living in such close proximity to several neighbors is fine with him. The difference is that the neighborly focus on sustainability at Green Bridge Farm inspires him.

“Working out here has given me a good sense of what it takes to make great food and community happen,” he says. “We moved to the South to get away from overpopulation and to find a place where we could grow our food and give our daughter a more free lifestyle. The community is in its early stages, but it’s peaceful, serene and clean here. I love to bring old neighbors from the city out because it’s a whole new world for them. It takes work to change our lives, but it’s actually easier than most people think.”

## N Street Cohousing

Kevin Wolf has practical advice for anyone hoping to start a Homestead Hamlet: “Tear down the fence between two houses, start using that space together, and you’re on your way.”

He would know. Thirty years ago, Wolf and his fiancée, Linda Cloud, bought neighboring houses in a Davis, California, subdivision and did just that. The subsequent retrofit of these rundown houses created the now-thriving N Street Cohousing community.

“We used to say, ‘Wouldn’t it be great if we could have six houses connected with each other?’” he says. “Now we look back at that and laugh.” Adding one house at a time, the community has expanded to include 21 houses with common, connected yards, and three more homes across the street. Though the number of residents ebbs and flows, Wolf says the current population ranges from 2 to 65 years old, with 55 adults and several children.

The advantage of using existing houses in an established neighborhood is that there’s no need to try to convince a bank or city zoning department of the project’s worth, and no need to try to locate the just-right piece of land, or hassle with architects and each other over the community’s design. If someone decides to





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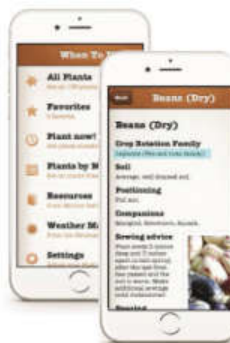
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sell and move on, it's just an individually owned home going on the market.

In 1999, the Davis City Council recognized N Street as a planned development, which allowed second units on existing lots and a covenant that bans backyard fences. The core of the block is now open and green with fruit trees, a chicken coop and space for various forms of hanging out.

"We don't have bylaws, but we do have rules and guiding principles," Wolf says (see the community's website at [www.NStreetCohousing.org](http://www.NStreetCohousing.org) for details). "And one of the key ones is, 'It's your house, and it's your yard.' We can't force people to paint their house a particular color or keep their house to a certain standard of niceness. We don't try to force our neighbors to do things they might not want to do."

In addition to its balance between privacy and conviviality, one of the strengths of N Street is that about a third of the residents are renters, and several of the absentee landlords are former community residents. This adds to the richness, Wolf says, because residency isn't limited to a particular economic demographic.

"The thing I love about living at N Street," says Emma Torbert, a resident for six years, "is how easy it is to connect with people. I have two jobs and am busy all the time, but I still don't feel isolated. One of my favorite parts is our common meals, where there's always a lot of visiting and chatter. And there's this sense that if you want something to happen, you just suggest it and get it going."

Some of the things that "just happen" include playing at game and craft nights, building an outdoor pizza oven, making music together, and enjoying barbecue in the shared backyard. N Street Music, a regular house concert series in the Common House, showcases local entertainers and traveling musicians.

"If you look at the problems in the world, trying to tackle even one seems daunting," Torbert says. "But it takes way less effort if you work with your neighbors. You can build momentum for change very quickly."



A seed-lending library, cultural celebrations and a repair café are some of Seattle's Phinney Neighborhood Association's offerings.

## Phinney Neighborhood Association

Many of Seattle's Phinney Neighborhood Association's programs and initiatives exemplify the kind of "greening in place" that could be a model for all urban neighborhoods. In the late 1970s, Phinney Ridge was a transitional neighborhood with an elderly population that was passing away or moving on. Young families were attracted to the area's inexpensive housing—and so were developers who wanted to tear down the older homes to build big apartment

buildings. Neighbors banded together to successfully push back the developers, and then they wondered how to have the most positive impact on their neighborhood.

Consensus arose quickly: A community center was essential. A local elementary school slated for closure fit the bill, and the newly minted Phinney Neighborhood Association (PNA) moved into the breach. Its first initiative was a program to build energy-efficient storm windows for the old, leaky Craftsman bungalows that characterized the neighborhood. Now, 34 years later, the community center is still vibrant and active—and many of those windows are still in place.

"The community sees a need and then we create a solution," says Bill Fenimore, who became PNA's facilities director in 2001. "Unlike the top-down model of many organizations, PNA evolves organically from ideas that arise from the people who live here."

Offerings include a senior center, hot meal programs, daycare cooperatives, an art gallery, outdoor sculpture exhibits, a concert series, and various community-generated classes and events that enrich neighborhood life. The Well Home Program provides regular classes on sustainable home improvement and a library of resources for every imaginable home maintenance project. Plant-care clinics help green the thumbs of many residents, and a farmers



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Members of the Eugene, Oregon, River Road Resilient Food System transport plants in the neighborhood nursery during a work party.

market and CSA bring locally grown, organic food to those who don't grow their own.

The nonprofit PNA relies on multiple revenue streams, including grants, capital campaigns, gifts and annual memberships. Regular online surveys ask members what's important to them and which programs and projects they'd like to see next. The association recently collaborated with Solarize Washington to bring solar energy to homes in the community, and with Seattle City Light to host a large solar array at the PNA's Phinney Center. Households and businesses can invest in the array, reaping the benefits of renewable energy without having to install a unit on their own properties.

Sharing is an important part of the PNA model, with multiple book swaps, and libraries for tool sharing and seed lending.

"We're trying to combat the overconsumption paradigm with both the tool-lending library and the Fixers Collective," says Todd Shwayder, PNA's Well Home coordinator. "Not every home has to have its own gas-powered lawn mower, and not everything that's broken needs to go to the landfill. Borrow tools—we have hundreds—and bring your broken stuff in to see what can be done."

## River Road Resilient Food System

Jan Spencer hopes that when you look at his neighborhood in Eugene, Oregon, you'll see a preview of suburbia's future. The River Road Resilient Food System (RRRFS) isn't a formal intentional community, but a network of suburban homes in various stages

of transition to sustainability. Though suburbia has gotten a bad name as the nexus of overconsumption, Spencer says these residential areas actually are uniquely set up to quickly transition to robust, localized food systems. The large properties with perfectly manicured lawns can become organic gardening havens. Motivated by a desire for constructive response to the global challenges facing agriculture and a belief in the benefits of localized food production, River Road neighbors have taken on that process enthusiastically, Spencer says. "Food Not Lawns" is their organizing principle.

Spencer (who blogs at [www.MotherEarthNews.com](http://www.MotherEarthNews.com)) is a suburban permaculture pioneer who began turning his lawns into a garden 15 years ago by taking a jackhammer to his driveway and replacing concrete with vegetables. At about the same time, his neighbors Ravi Logan and Michele Rene built a cob and straw bale studio in their backyard for a yoga meditation space. Their center, Dharmalaya, has become a focal point for community.

"Six other permaculture projects are in process within a five-minute bike ride of my house," Spencer says. "My next-door neighbor took out his gravel driveway and turned it into a garden. He has bees and a fair amount of edible landscaping. Neighbors on the other side have cold frames on multiple raised beds along with several chickens—and still plenty of grassy backyard. We started with a handful of neighbors and now have more than a dozen properties involved."

Clare Strawn, who moved to the neighborhood in 2010, says the community is loosely organized and accomplishes its work project by project. Because this is the Pacific Northwest, many of those projects involve removing bramble bushes—a lot of them.



River Road neighborhood residents enjoy a presentation at the annual village garden party.



In one case, neighbors got together and helped bring down an acre of blackberries to make way for a big shared garden. Neighbors have also restored and now maintain a previously overgrown, old 65-tree filbert (hazelnut) grove. Work on the grove was done in cooperation with the City of Eugene's Park Stewards program, which helps organize work parties and provide tools and logistical assistance. RRRFS has also collaborated with several neighborhood associations throughout Eugene.

"There are thousands of neighborhood associations in this country," Strawn says. "Can you imagine the huge difference they could make if they decided to organize local, sustainable food systems?"

## Simply Home Community

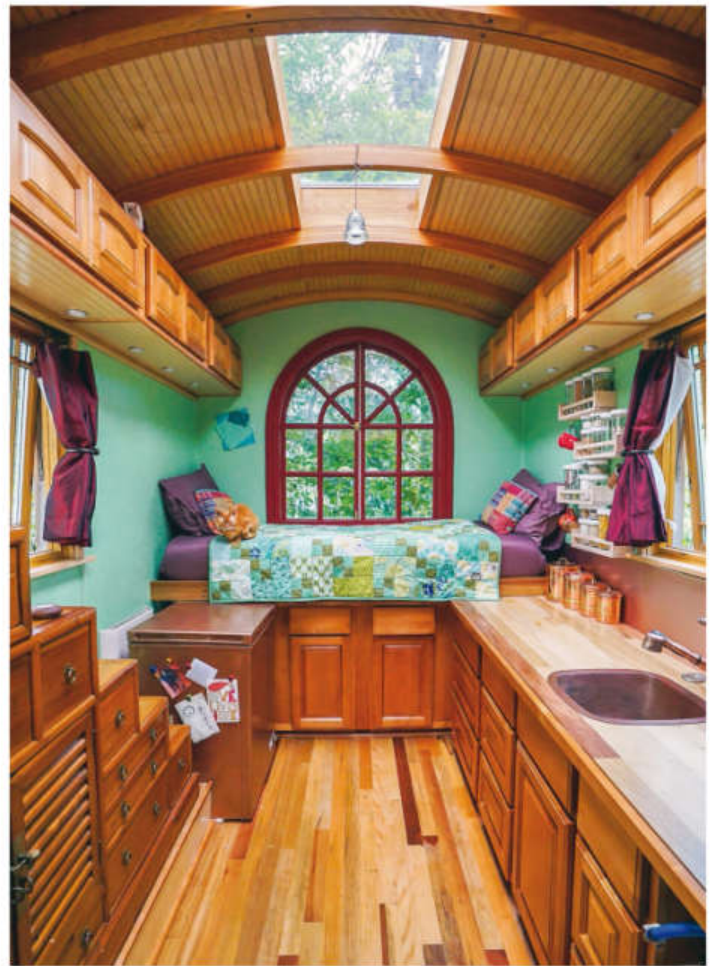
Over the past few decades, as the economy constricted, college loan debt expanded, and owning a home began to seem increasingly out of reach, some resourceful souls said, "Hey. Houses don't need four-figure square footage for us to call them home—let's see what we can do with 200 square feet." Turns out, we can do amazing things, including itty-bitty cabins, nomadic wagons, DIY house trailers, and retrofitted buses and shipping-container homes. Clever solutions to living smaller and better abound, and now the Simply Home Community, a new cohousing village in Portland, Oregon, has joined the mix. (Check it out at [www.ThisIsTheLittleLife.com](http://www.ThisIsTheLittleLife.com).)

In 2012, Lina Menard, Ben Campbell and Karin Parramore met in tiny house workshops Menard coordinated. All had been rethinking the home ownership paradigm—the expense, use of resources, isolation—and by the summer of 2013, all were either building or living in tiny houses. Along with a couple of other small-home aficionados, they began to discuss living collaboratively, and settled on a cohousing model in which residents maintain individual homes but share such resources as open space, a garden and a common house.

They formed a working group to find a suitable piece of property and drafted a set of Community Living Agreements. They soon found a single-family house around which they could circle their tiny homes—none of them with an internal measurement of more than 150 square feet—on a large backyard lot. Although "bedroom community" usually implies a commuter suburb, in this case, it's actually a community of bedrooms. The tiny houses are viewed as detached bedrooms, not separate homes.

The "Big House," which at 1,450 square feet really isn't so big, houses three people and provides a communal kitchen, bathroom, and living, dining, laundry and guest rooms—a setup that mitigates some of the space limitations of a tiny home. Each tiny home is owned by those who dwell in it, and though two community members own the "hub" home now, plans include changing ownership to a multimember LLC (limited liability company). The four little owner-built houses are highly customized, each with a galley kitchen, bed, and space to study, eat, work and think, and each takes on the personalities of each owner—no cookie-cutter homes here.

These denizens of the little life have built a garden shed and a bicycle shelter together, and have tackled several home improvement projects and started a community garden.



Lina Menard designed her tiny home, "The Lucky Penny," and built it with the help of friends, using many surplus and salvaged materials.

"Tiny home living is absolutely easier and much more fun in a group," Menard says. The challenges are the same as those that characterize any human community, but the upsides have far outweighed the drawbacks for this group, whose members range in age from 28 to 50. "We've enjoyed sharing resources, as well as the highs and lows of everyday life. We don't always socialize together, but hanging out happens because we're all here, so there are ready-made connections. We've gotten to know each other's friends, and have devoted some time to just getting to know each other better."

Menard believes the tiny home cohousing idea is going to continue to expand because it's such a good option for compact development in low-density neighborhoods. (For books about tiny homes, check out the titles by Lloyd Kahn on Page 65.) "Living little" can provide affordable housing for students or retirees. Families could use tiny homes as additions for older family members or teens, who could eventually roll off to college or their first jobs pulling the little homes they've built themselves. 🌱

K.C. Compton is an editor for MOTHER EARTH NEWS. She's full of hope after researching and writing this article. We plan to cover Homestead Hamlets each year, so if you know of other communities tackling related projects or with similar goals, write to [Letters@MotherEarthNews.com](mailto:Letters@MotherEarthNews.com).





This weekend, make fresh, cultured yogurt and some nutty granola to pair together all week.

# Grab 'n' Go HOMEMADE CONVENIENCE FOODS

Need quick snacks and meals? Drop processed, store-bought fare, and opt instead for these healthful edibles that work well in a pinch.

Edited by Shelley Stonebrook

Perhaps since the era of the TV dinner, “convenience” has reigned king in food marketers’ appeals to consumers. From the overwhelming variety of store-bought snack options to instant meals in boxes and bags, food is always at the ready, and its preparation is largely outsourced. Even homesteaders and advocates of eating nourishing, local

foods may have difficulty avoiding processed, store-bought options when the goin’ gets busy.

But all of this so-called convenience comes at a cost. Additives, stabilizers, preservatives, artificial coloring and trans fats—along with sugar-packed, sodium-stuffed, and refined-carb-loaded recipes—are part and parcel of processed food. In a nutshell, we lose control over ingredients. But convenience food doesn’t



Stocking up on snacks  
and freezer meals made  
with local ingredients is  
self-sufficiency at its finest.

have to equal junk food, and quick meals don't have to mean a stop at a drive-thru. Some MOTHER editors, plus a few of our resourceful readers, rallied together to offer you these fresh ideas for using seasonal produce and healthful ingredients to create simple, make-ahead snack foods and meals.

## Pantry Prep and Planning

A good first step is to pack your pantry with an arsenal of ingredients you can use to make grab-and-go foods. One smart approach is to buy certain ingredients in bulk, and use large jars with screw-top lids to keep these foods at the ready. Dried beans, whole grains, nuts, dried fruits, maple syrup and honey are a handful of items worth stocking.

Keep plenty of serving-size, freezer-safe containers around, so that when you make a big batch of a shelf-stable or freezable food, you can easily stash it. Ideally, for snacks, you'll want the containers to be small enough so that you won't have to re-portion foods when you're hungry or heading out the door—4- and 8-ounce Mason jars will work well.

Don't wait until your tummy's grumbling, you're leaving for an appointment, or it's 10 minutes to dinnertime before you think about preparing something wholesome to eat. Carve out a bit of time once a month to prepare freezer-safe or pantry-stable meal and snack recipes, plus a bit of time weekly to prep fridge-friendly morsels.

## Get Equipped

Arm yourself with a food dehydrator and a good blender or food processor, so homemade beef jerky, dried fruits and vegetables, hummus and other dips, healthy smoothies, and so much more become readily accessible.

Managing Editor Jennifer Kongs says the two biggest players in her kitchen are her Vitamix blender and Instant Pot electric pressure cooker. Even if you don't buy these brands, a food processor and a pressure cooker can make any meal more convenient. Kongs grinds grains into fresh flours, makes nut butters, and purées dips, soups and smoothies in her Vitamix. This allows her to keep a pan-

try of whole, unprocessed ingredients to combine into whatever she desires based on her recipes, taste buds and available time. The Instant Pot speeds the process of cooking beans, rice, or even a whole chicken or roast. "I can put any of these items into the cooker, set the cook time and pressure level, and then prep the rest of the meal. Within an hour, I can have dinner on the table—even if I forgot to soak the beans!" Kongs says.

A water bath canner and pressure canner will help immensely, too. You can put up seasonal produce during summer and fall, and use any downtime (think winter, when your canner isn't working overtime) to can beans, soups and chili.

Senior Associate Editor Rebecca Martin cans fruits or vegetables nearly every weekend during the growing season, but never a big batch at a time. "Smaller batches are less labor-intensive, and you can wedge them into a tight schedule more easily than larger batches that require a full day in the kitchen," she says. She preserves salsa in her Instant Pot, which can double as a water bath canner. "I just pop in four pint jars of salsa and process them for 10 minutes. There's no open stockpot filled with boiling water pumping heat and humidity into the air, so the kitchen doesn't get uncomfortable, even on the hottest days."

## Freezable Fare

Savvy snackers also need to befriend their freezers. "I'm a fan of freezing because it's fast, doesn't require special equipment, and preserves the food's flavor and nutrients," Martin says. You can easily package many snacks as individual



## Nutty Energy Bites

Associate Editor Amanda Sorell adores these energy bites for after-work snacks and pre- or post-exercise nourishment. A pared-down version of Rosemary Gladstar's "Zoom Balls" recipe (available in her book *Rosemary Gladstar's Herbal Recipes for Vibrant Health*; see Page 65), they're easy to make and store well in the freezer.

*Yield: about 30 snack balls.*

**Directions:** Combine all ingredients in a large bowl and mix well. Roll mixture into 1-inch balls (make smaller or larger if desired). Try rolling the balls in cocoa powder, or extra chopped nuts or coconut, if you'd like. Store balls in the fridge or freezer. If frozen, pull out a handful and let thaw for just a few minutes, and they'll be ready to pop in your mouth!

### Ingredients

- 3 cups tahini
- 1 cup nut butter
- 2 cups honey
- 1 cup dark chocolate chips (optional)
- 8 ounces shredded coconut
- 1 cup chopped almonds or nuts of your choice



servings, and then pop them into the freezer for later. Instead of using plastic bags, Martin cuts down on waste by freezing snacks and individual servings of meals in canning jars.

Kongs makes small, freezable hand pies (a DIY version of Hot Pockets) for a snack or light meal. Start by making a batch of any standard roll or bread dough. Next, cook the filling, which can be anything from breakfast-style eggs and cheese to savory ham and mashed beans—all with chopped, seasonal veggies. Roll out the dough and cut it into 5-inch squares, and then place a mound of filling into each square. Fold the corners of the dough up around the filling, pinch them to seal, set them seam-side down on a baking sheet, and then brush the tops with melted butter. Bake in an oven at 400 degrees Fahrenheit for about 20 minutes, until golden-brown. They'll freeze perfectly.



For fast snacks, portion nuts, dried fruits, fresh veggies and homemade crackers into small jars.

Reader Lesley Montenegro makes big batches of hummus, puts one large jar of it in the fridge, and then divides the rest into 4-ounce Mason jars for the freezer, where they're ready to grab when needed.

To make hummus, cook garbanzo beans (using a pressure cooker for faster prep), and whiz them in a food processor with tahini, olive oil, garlic, lemon juice and salt. Hummus dip adds a flavorful protein boost to a snack of sliced vegetables.

Martin recommends kohlrabi patties for unique freezer eats. Cut peeled kohlrabi into quarters, and then shred them in a food processor. Toss the shreds with a little olive oil and salt, spread it out on a shallow pan, and roast at 375 degrees until tender and some crispy browned bits have formed around the edges. Cool slightly, and then shape into patties. Layer parchment paper between the patties, and freeze.

Martin also likes to whip up homemade graham crackers to freeze. "Recipes for these abound on the Web," she says. "I like to make them on the weekend and, as soon as they've cooled, pop them in the freezer, where they'll stay good almost indefinitely. They'll thaw in less than 10 minutes when you pull out a few for a bedtime snack with a glass of milk."

Reader Elizabeth Smith blends 1 cup of homemade yogurt with a ripe banana and a few blueberries, pours the mixture into Popsicle molds, and then freezes the molds to make homemade yogurt pops.

Frozen fruit is always good for smoothies. If bananas start to brown, peel them and throw them into the freezer to toss into smoothies or banana bread later.

Bake double recipes of wholesome muffins or quick breads for the freezer. Store what you can eat readily in the fridge, and whenever you grab the last

## Homemade Fruit Roll-Ups

Reader Terese Roberts makes fruit leather with her 9-year-old grandson because he loves the fruity treats, and she's able to avoid processed sugar and artificial flavors and colors. Feel free to substitute other seasonal fruit for the strawberries. Light-colored fruits will benefit from a dash of lemon juice added to the mix to prevent darkening. If you use apples, try adding a little cinnamon and nutmeg, too.

**Directions:** Place strawberries and water in a saucepan over medium heat. Heat and simmer for 10 to 15 minutes, and then mash with a potato masher or purée in a food processor until smooth. Add honey to taste. Pour purée onto a nonstick dehydrator sheet or large baking pan lined with parchment paper. Dry in a food dehydrator for 6 to 8 hours, or in your oven on its lowest temperature setting for 10 hours or more, until smooth and not sticky. Cut fruit leather and parchment paper into strips of desired width. Roll up. Place in airtight bags or containers, and then store in fridge.

### Ingredients

- 4 cups strawberries, hulled, rinsed and chopped
- ½ cup water
- 2 tbsp honey, or to taste





one, transfer a few more into the fridge so they'll be thawed.

Senior Associate Editor Robin Mather uses her freezer for now-and-later cooking: Cook and eat some now, and freeze even more for later. "If you're going to go to the trouble of making a big pot of spaghetti sauce, why not freeze some—or even can it—so that another night, you only have to reheat it?" she says. The same is true of lasagna, pizza (freeze it topped but unbaked), meatloaf, enchiladas, soups and so on. Mather also considers homemade vegetable, beef and chicken stocks convenience foods, because she uses these broths in so many recipes, and they're easy to make in big batches and freeze in 1- or 2-cup containers.

## Fast Fridge Foods

A simple, classic snack to stash in the fridge is a batch of hard-boiled eggs. Boil a dozen on Sunday, and they'll last the week. Transform a few into deviled eggs if you have an extra 10 minutes.

Slice and store vegetables and fruits in snack-sized servings in the fridge, too. Set aside several portions right when you harvest the veggies from your garden or when you bring them home from the farmers market or store. If you've already refrigerated small jars or zip-top bags of carrot sticks, cucumber slices or small broccoli florets, plus mini-jars of hummus or other dip, you'll be able to rely on them when you're busy.

Reader Lucinda Wehrkamp loves chia seed pudding for a simple, satisfying snack. Combine 1 tablespoon of chia seeds, 1 tablespoon of cocoa powder, 1 tablespoon of honey, and 1/2 cup of milk in a pint jar, and refrigerate for at least 8 hours. Swap in yogurt for the milk if you prefer, and toss in nuts if you like.

Many readers and editors culture homemade yogurt at the start of each week, and enjoy it with homemade granola or fruit, drizzled with honey or jam, dolloped atop baked goods, or in smoothies.



**Plan ahead: Dry veggies into chips and meat into jerky to stash in small, airtight containers in the pantry, and bake a big batch of savory hand pies for the freezer.**

## Pantry-Stable Edibles

Mixed nuts, trail mix and homemade granola divvied into small bags or jars are perfect pantry snacks. Make homemade granola bars packed with nuts and dried fruit, and package each individually. Many of our readers prep dry mixes—for biscuits, pancakes, cornbread and cookies—ahead of time in glass jars, too, for speedy baking. (Who needs Bisquick?)

Use beef or turkey, plus simple seasonings, to make jerky. You can use a food

dehydrator for this, or just your oven. Portion the jerky into airtight containers, and it will keep in your pantry for two to three months. Find a jerky recipe at <http://goo.gl/RDGmz8>.

Home canners can fill the pantry with jams (perfect to spread on homemade crackers or bread), dill pickles, dilly beans and applesauce.

Crackers don't have to come in a box. Make your own—such as the savory almond-flour crackers at <http://goo.gl/kSQ45P>—and store in airtight containers in your pantry for up to two weeks.

## Seasonal and Local

Taking back snack foods and prepping food for larger meals are key aspects of embracing overall food conscientiousness that go hand-in-hand with local, seasonal eating. For instance, as sweet peppers and eggplant become ripe, roast some and then purée the roasted vegetables into a handy base for dips and spreads. Slice seasonal produce for fresh eating; make pumpkin muffins for the freezer in autumn; and go crazy with kale chips when your plants are at peak production. Live near a coast? Pressure can 8-ounce jars of tuna to spread on crackers or to make a quick sandwich or tuna casserole. Or, for inland eaters with limited freezer space, pressure can chicken, beef and other meats you can source from local producers. Of course, learning how to smoke meat and fish will up the flavor options of these preserved foods.

Martin notes that taking charge of snack foods and freezing meals allow her to support small farmers and ranchers. "I find it satisfying to buy only toilet paper and a few non-food necessities at the chain grocery store. Nearly everything else comes from the freezer and home larder, and was made with ingredients from local producers whom, I believe, deserve my money and patronage more than huge commercial firms," she says. "It's self-sufficiency at its finest." 🌱



# FULLY LOADED

## *Choose the Right Trailer for Your Homestead*

From stock trailers to flatbeds, here's the lowdown on your hauling options, plus tips on "towing" the line of safety.

By Oscar H. Will III

**T**railers are a matter of economy and efficiency. They add value and possibilities to any tow vehicle, but they also add liabilities and responsibilities. Towing isn't quite as simple as hitching a trailer to your truck and heading down the road, but anyone who is comfortable behind the wheel of a vehicle can master the art of towing.

### The Right Rig

For hauling livestock, you can use a **general-purpose stock trailer**. Ranchers often prefer a pipe-and-panel stock trailer with at least one fore-and-aft partition. Those trailers can easily accommodate a small tractor with implements, as well as move a teenager off to college (you might want to clean it first, depending on the teen).

Specialized hog and sheep haulers have a lower height.

**Open-deck flatbed trailers** are perfect for moving machinery, and can be loaded with bulk freight from virtually any angle. These handy haulers come with plenty of load-securing attachment points for chains and binder straps, and are also equipped with evenly spaced stake pockets, which can hold removable side panels and livestock compartments.

**Hydraulic dump trailers** are useful for hauling bulk materials, such as feed, grain, manure, gravel, mulch and sand. Many dump trailers can also accommodate a small tractor or utility vehicle (but probably not the college-bound teen).

**Utility trailers** are generally light-duty. Smaller models are suitable for hauling lawn and garden tractors or other light materials, such as bagged mulch.

### Calculate Capacity

The inexperienced hauler often assumes that size is what matters when

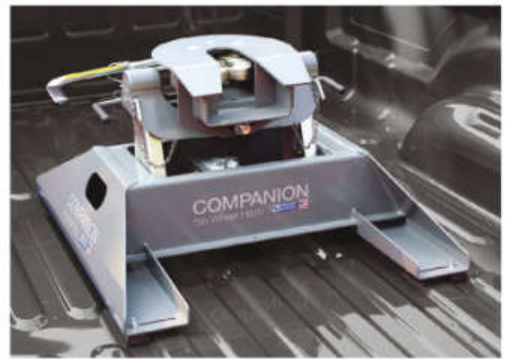
**Be conscious of weight ratings for your tow vehicle, tires and trailer axles. This stock trailer may only haul one bull safely (see "Calculate Capacity," right).**







**A hitch for every purpose: Light-duty, ball and socket hitches are common (above), but pintle hooks (center) are better suited to heavy-duty tag-along trailers. Fifth-wheel (top right) and gooseneck (right) hitches haul unpredictable loads, such as livestock.**



choosing a trailer, but weight is more important. Consider a 16-foot tag-along livestock trailer with a 5,000-pound gross vehicle weight rating (GVWR). While it might have room inside for four 1,500-pound bulls, simple math reveals that you can't haul 6,000 pounds of bull at once. So, how much bull can you haul?

The stock trailer's 5,000-pound GVWR includes the combined weight of the trailer and the cargo. The trailer weighs 2,500 pounds when clean and empty, so its payload capacity is 2,500 pounds. Or is it? The trailer's GVWR is based on the capacity of its axles and, to some extent, its framework, but what about tires? Our test-case trailer has a pair of axles underneath, each with a 2,500-pound gross axle weight rating (GAWR). But the four tire sidewalls show that they're rated for 1,000 pounds each.



This brings the actual GVWR down to 4,000 pounds, which leaves enough capacity to haul one of the 1,500-pound bulls after deducting the 2,500-pound weight of the trailer. If the trailer is full of manure or caked with mud or ice, it won't have enough capacity to haul even one bull. In summary, to calculate actual capacity, choose the lowest weight rating from the

GVWR, GAWR and tire ratings, and then subtract the actual weight of the trailer.

Just as critical is knowing whether your tow vehicle is suited to a specific trailer. Vehicle manufacturers provide a gross combination weight rating (GCWR), which is defined as the combined weight of the loaded trailer and truck when hitched together. The GCWR sets the highest weight limit for total payload.

## Getting Hitched

If you tow with a pickup, frame-attached hitch mounts are typically located ahead of the rear axle ("gooseneck" or "fifth-wheel") or behind it ("tag-along"). In many cases, the pickup's rear bumper is rated as a hitch mount, and many farm trailers are coupled to balls bolted to the bumper's center. Most vans and larger SUVs can be outfitted with hitch mounts attached to the frame behind the rear axle; some come equipped with rear bumpers with towing capacity.

The hitch receiver is an ideal mount: a 2-inch-square steel socket centered beneath the rear bumper. The socket is

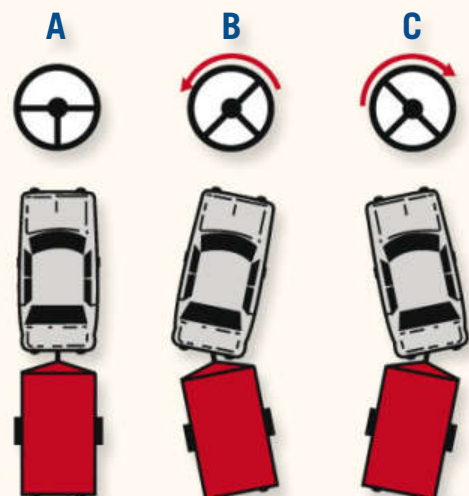
## Trust Your Mirrors

Backing up requires low speed, vigilance with your mirrors, and knowledge that the trailer will move in the opposite direction that you steer the tow vehicle. For example:

A driver needed to maneuver a small trailer around a gradual 90-degree curve. She pulled the entire rig straight forward ahead of the turn (A) and began to back up. Note that she started by turning the car's front wheels to the left (B). In reverse, that made the back of the car head left, which pulled the trailer's coupler to the left, effectively aiming the rear of the trailer to the right.

Well into the turn, the driver turned the car's wheels slightly to the right (C) to allow the car to follow the trailer and to end the turn. (Novices tend to overcorrect at this point—rather than gradually straightening the truck with respect to the trailer, they cause the trailer to turn opposite the desired direction. If that occurs, get out of reverse and pull the rig forward to straighten things out before backing up again.)

For this maneuver, the driver watched the right-side mirror, or the same side as the turn. Resist the urge to look over your shoulder—hitting a fence post with the front of your vehicle as it swings around a curve is just as frustrating as backing into a tree.





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designed to receive different hitches, which can be pinned into the socket and easily swapped for a different style.

The most commonly encountered hitch systems match a ball on the tow vehicle to a socket coupler on the trailer's tongue. All have a specific weight rating. Light-duty tag-along hitches are generally rated for trailer tongue weights of less than 500 pounds. Weight distribution attachments, required for towing tag-along Class IV and heavier unclassified trailers, apply leverage across the hitch and place some of the trailer's load on the tow vehicle's front axle to keep tongue weights within specification. Other heavy-duty tag-along trailers might be equipped with a ring-shaped coupler "lunette eye" — a pintle hook on the tow vehicle is required to make that hitch.

When routinely towing heavier or longer loads, gooseneck or fifth-wheel systems are ideal. These heavy-duty hitches are sometimes rated for up to 25,000 pounds GVWR. The gooseneck system consists of a 2 5/16-inch-diameter ball located in the truck's bed, attached to its frame through a heavy-duty mount, and a large socket coupler built into the trailer. The fifth-wheel system consists of a slotted plate "fifth-wheel" with a retaining latch located in the pickup's bed (solidly attached to the truck's frame) and a kingpin coupler on the trailer. Nearly every semitrailer combination on the highway today has this hitching system. After hitching a trailer to a tow vehicle, both need to share an electrical system so that all required lights on both vehicles operate together. This coupling is accomplished with standard plug-and-socket combinations; use an adapter if the plug and socket don't match.

Higher GVWR trailers are often equipped with electric brakes or electrically actuated hydraulic brakes. Power for these braking systems comes from the tow vehicle's electrical socket via an inertia-sensing brake controller that keeps them in sync with the tow vehicle's brakes. Hit the brake pedal hard, and the trailer will brake rapidly and with more force than it would with a lighter touch. Most controllers allow manual trailer-brake



activation and power adjustment to accommodate different loads.

## Load Control

Each trailer's GVWR is based on an evenly distributed, maximum payload, which is easy to achieve with grain in a dump trailer, but not so easy with sheep in a livestock trailer. As you fill any trailer, do your best to distribute the weight as evenly as possible for adequate load control and safety. Static loads are more predictable and safe, so confine livestock or liquids, if at all possible. Their movement should be limited to have minimal effect on the trailer's tongue weight or pitch. You can successfully load dry goods into an enclosed trailer with careful packing, but strap portions of the load to the trailer's floor or walls to avoid shifting.

Securing freight on a flatbed is an absolute must—even if it's just a load of hay. State and federal Department of Transportation (DOT) load-binding rules continually evolve—check your state DOT's regulations at least once a year. Exceeding the binding system's weight rating is a sure way to earn an expensive ticket or huge liability damages if it fails—even in an accident that isn't your fault.

Trailer tongue weight should be approximately 10 percent of a trailer's loaded weight. This is critical for tag-along trailers because goosenecks and fifth-wheels are designed with an unladen tongue weight approaching 10 percent of the GVWR. Moving freight forward increases the tongue weight, which can overload the truck's rear axle and lighten its front end enough to make steering difficult. Moving freight behind the rear trailer axle can result in negative tongue weight and cause tow vehicle instability. 🌲

*Grit* magazine's Editor-in-Chief Hank Will has pulled many types of trailers over thousands of miles, carrying hay, livestock, machinery, and even his children's household goods. He installs his own hitches, secures his own loads, and takes towing safety seriously.

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Circle #9; see card pg 81



# Our Quest to Create a SUSTAINABLE FARM

By growing our own food and producing our own energy, we're getting closer to achieving a practical and productive farmstead with a positive net impact on the planet.

By Bryan Welch

**W**hen my wife and I were in our early 20s, cash-strapped with our first baby in diapers, someone told me that the secret to financial security was to make a budget and live by it. So I made a budget.

My budget showed that we would have \$11 per month in disposable income, if no one went to the doctor and neither of our decrepit cars ever needed repair. As if. It didn't present a path to financial security. It did, however, demonstrate the value of a veg-

etable garden. By starting to grow most of our own food, we saved a few hundred dollars—and that summer, a few hundred dollars made a lot of difference. More importantly, our family established a collective vision, gestated in that garden, of efficient self-reliance.

We visualized a goal we've been working toward ever since.

## Positivity Puzzle

These days, we're no longer so focused on stretching grocery money. Instead, we're fascinated by the idea that we can produce food efficiently—for us and a bunch of other people—and that





our lifestyle can have a positive net impact on the global environment.

That's right, a *positive* impact. Maybe.

We now live on 50 acres of tallgrass prairie in eastern Kansas. We raise sheep, cattle, goats and chickens for meat. With every passing year, our managed grazing makes the land more fertile. With photovoltaics (PV) installed on our barn roof, we generate more electricity than we consume. We do most of our driving in an electric car, also powered by our home's solar system. A solar-thermal hot-water system provides plenty of hot showers. Our vegetable garden—the seed that started it all—remains.

When we socialize with urban friends, we bask in their admiration of our country skills. We smile modestly and tell subtly self-congratulatory stories about the joys of the garlic crop and how the arugula complements a homegrown rack of lamb.

But compared with our farmer friends, we are pathetically unskilled. I don't weld and I'm helpless when confronted by any significant mechanical problem. Plumbing terrifies me.

To make our farm economically self-reliant, we would need to employ all of those skills and more. Instead, we make most of our money elsewhere and pay mechanics, plumbers and welders when necessary. We're emphatically not supporting ourselves financially as farmers.

Rather than measuring our farm's efficiency economically, we concentrate on solving the puzzle of figuring out how our home, farm and lifestyle can have the most positive net impact on the planet. How can we, and our neighbors, engage in a system that's mindful of the land and sustainable for future generations?

## Carbon In, Carbon Out

Unsustainable farming practices worldwide contribute to increased levels of carbon dioxide, methane and other greenhouse gases in the air, which get trapped at the Earth's surface and promote climate change. Concern about the carbon in our atmosphere has led us to focus new attention on how we farm and live.

Whenever we burn fossil fuels, we are taking carbon stored in the Earth and releasing it into the atmosphere, where it contributes to climate change. When farmers use synthetic fertilizers and plow the land to grow bumper crops for livestock and humans, they affect the environment in much the same way, and steadily deplete the soil of its natural fertility.



**Controlled pasture burning restores nutrients and maintains plant health for optimal grazing.**

Conversely, when my wife and I graze our animals in a carefully managed way on natural prairie, it has the opposite effect. Grazing animals on perennial pasture actually improves soil health and sequesters carbon in the soil. In fact, a lot of scientists think a healthy prairie may be as, or even more, effective at removing carbon from the atmosphere as the same acreage of rain forest.

Here's how it works: Plants use solar-powered photosynthesis to combine carbon dioxide from the air with water to form carbohydrates—sugars and starches. Over thousands of years, prairie plants have evolved together with herds of bison, deer, elk

and other grazers. These herds eat prairie plants down to the ground, and, in response, the plants re-balance themselves by allowing some of their deep roots to die. These decomposing roots become carbon-rich humus. The prairie plants are adapted to recover from the grazing and grow new leaves and roots quickly each time the herds graze their tops down. This means that the more often the herds graze off the tops, the more carbon-rich humus is stored deep in the soil. In addition, legumes in the pastures replenish essential nitrogen, and deep-rooted perennial species mine the subsoil for minerals and bring them to the surface. The grazing animals also distribute nutrient-rich manure evenly across the grassland.



**Frisky kids frolic in freshly set-out hay on a winter day.**

These are the principles behind the success of managed intensive grazing systems, similar to how we raise livestock on our farm. Farmers can optimize this solar-powered, soil-building, carbon-sequestering process by creating diverse pastures with plants regionally adapted to thrive in each growing season. Meat, dairy and eggs produced via this pastured system are also much more nutritious than products from animals fed grain in confinement operations.

What a great story: The pastures feed our herds and we harvest the nutrient-rich meat, while at the same time our pasture plants



store carbon and our soil grows more fertile. (This is how the deep, fertile prairie soils have been formed around the world.) No outside fertilizers are needed—our farm is truly solar-powered and *beyond* sustainable!

So, our cattle, sheep and goats are carbon sequestration machines. Plus, our meat, eggs and vegetables travel a lot less than grocery store fare, because they mostly come from our own property, or from our friends and neighbors. We think that's cool.

## Investing in the Power of the Sun

Nearly 70 percent of the electricity residents in the United States consume comes from fossil fuels, which contribute to growing levels of greenhouse gases in the atmosphere that are throwing our climate out of balance. Equally vexing, from my family's perspective, is that we can't control the effects that the extraction and use of fossil fuels have on the world. We know fossil fuels pollute. We know the industrial processes for extracting, refining and distributing them also have negative environmental consequences. And we know some of the countries we buy them from have leaders who don't share our concerns about human rights. When we fill our tanks with fossil fuels, we are conscious that we're not doing good in the world.

We've made two investments that have dramatically reduced our reliance on fossil fuels. The first and most important was installing 26 PV solar panels on the roof of our barn. In summer, they produce about twice the electricity we consume, pushing the surplus




This solar-thermal system taps the sun's rays to heat the home's H<sub>2</sub>O.

out onto the grid for others to use. In winter, they produce about half the energy we consume, and we buy the rest from our local utility. Over the course of a year, we're just about even, producing a little more electricity than we consume.

Through our solar contractor, we contacted a local bank that was willing to help us lease our system for about \$145 a month—almost exactly the amount of our average electricity bill before we installed the panels. The lease gets gradually more expensive each year, which we rationalize with the assumption that electricity from the utility company will gradually get more expensive as well. Even if it doesn't, we don't mind. At the end of

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Circle #32; see card pg 81





Welch's Chevy Volt requires minimal maintenance and gasoline.

our 15-year lease, we'll be able to buy our system for less than 20 percent of its original cost.

One of the loveliest qualities of photovoltaics is their durability; they suffer little wear and tear. Our system has no moving parts—just 26 panels, some wires, a few switches, and an inverter that conditions the raw current for use in our home. The panels do lose efficiency slightly over time, but the experts say we'll still have 80 to 90 percent of our generating capacity after 25 years.

For years, we debated whether to mount solar panels on the south-facing roof of our house, as we didn't want to cut down the trees shading that area. The solar engineers had an answer: Put the setup on the east-facing roof of the barn, and add one or two panels to make up for the loss of efficiency. Duh.

Now, our lights, refrigerators, freezers, air conditioner, computers, phones and just about everything else that consumes energy in our home run on power we generate using just the sun, some silicon and a few thousand feet of wire to move the energy around.

To heat our water, we have a separate solar-thermal hot-water system that heats food-grade glycerin in solar collectors and circulates it through a heat exchanger. The pump that moves the glycerin is powered by a PV panel, so when the sun is shining, the glycerin gets to work. (I confess to taking long, guilt-free showers.)

## Electric Cruising

After the solar collectors, our second most important investment was our Chevy Volt electric car, which goes 30 to 40 miles on plug-in solar electricity before switching to its gasoline-powered backup engine. Most days, I don't use any gasoline at all. It's the best car I've ever owned, in every way. It's fun to drive. It's quick. It's comfortable. And in my first 40,000 miles, I spent only \$116 in maintenance. That's right—40,000 miles, \$116.

After driving the Volt for three years, I've concluded that electric cars are just better vehicles. Electric motors are more efficient and powerful than internal-combustion engines, per unit of energy consumed, and electric motors can run 10 times as long before needing to be rebuilt. Even if I buy electricity from our utility company, the cost per mile of an electric car is only about

CHEVROLET; PAGE 62: BRYAN WELCH



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Circle #37; see card pg 81



15 percent of the cost of running a similar car on gas—and the EV pollutes less, too. What's not to love?

## Our Aspirations

We still burn propane (a byproduct of natural-gas processing and petroleum refining) for heat. This fall, we hope to replace our propane furnace and our old air conditioner with a geothermal electric heat pump, which will provide heating, AC, and supplemental hot water for when our solar hot water system can't keep up. Geothermal systems operate via underground piping that takes advantage of the relatively stable temperature of the Earth. By installing a piping loop and a ground-source heat pump, we'll minimize the amount of heating and cooling we'll need to fuel with electricity. We'll be an all-electric, all-solar household. Goodbye, propane tank.

Our farm truck and our tractor both burn diesel. Unfortunately, we haven't found an efficient way to eliminate our diesel use. So, we drive and haul as little as possible. If we were handier, we might collect and refine used vegetable oil to burn instead. Our neighbor does. If we had more time, we could probably double or triple our garden's vegetable production. We might even grow our own grain for breads and pastas. But veggie-oil diesel and homegrown



Barn-mounted solar panels and grass-fed sheep both harvest energy provided by the sun.

pastas are, for now, a bit more than we can handle. So, as always, we have aspirations and puzzles to solve. In a way, that's the best thing about the quest to do as much good—or as little harm—as we can in the world. We never run out of puzzles. 🌱

Bryan Welch was the publisher of MOTHER EARTH NEWS for 15 years, and is now CEO of B The Change Media. In between rounds of moving livestock with his trusty sheepdogs, he authored *Beautiful and Abundant: Building the World We Want*, available on Page 65.

BRYAN WELCH

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Circle #34; see card pg 97

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## real food

CLEARANCE

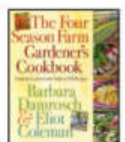
**FIX, FREEZE, FEAST**

Saving time and money is easiest with make-ahead meals. In *Fix, Freeze, Feast*, you'll find all the instructions you need to make delicious meals in advance, freeze them, and then enjoy them whenever you want. With more than 100 recipes, including beef, pork, chicken and vegetarian meals, as well as pastas and Mexican-style dishes, you'll be on your way to filling your freezer with delicious meals that, once thawed, will take just minutes to put on the table.

#4282 ~~\$14.95~~ \$6.99**MAKE-AHEAD MEALS MADE HEALTHY**

Serve your family the best, most nutritious food, and save time and money, with this mega-delicious guide to preparing fix-and-freeze meals to enjoy any night of your crazy-busy week! Unlike the sodium-laced, preservative-filled meals you might find in your grocer's freezer aisles, this book features all-natural recipes full of flavors that come to life the instant you reheat them.

#7154 \$19.99

**THE FOUR SEASON FARM GARDENER'S COOKBOOK**

*The Four Season Farm Gardener's Cookbook* is two books in one. It's a year-round, seasonal cookbook with 120 recipes to maximize the fruits (and vegetables!) of your gardening labor. It's also a step-by-step garden guide full of easy-to-follow instructions and plans for different gardens. It covers properly sizing a garden, nourishing the soil, and the importance of rotating crops and planning ahead.

#6545 \$22.95

NEW!

**FLOUR WATER SALT YEAST**

There are few things more satisfying than biting into a freshly made, crisp-on-the-outside yet soft-and-supple-on-the-inside slice of perfectly baked bread. In *Flour Water Salt Yeast*, baker Ken Forkish translates his obsessively honed craft into scores of recipes for rustic

boules, Neapolitan-style pizzas, and more—all suited for the home baker.

#7663 \$35.00

CLEARANCE

**CHARCUTERIE**

*Charcuterie* is a culinary specialty that originally referred to the creation and preservation of pork products, such as salami and prosciutto. This book presents 125 recipes that are both intriguing to professionals and accessible to home cooks, and include salted, air-dried ham; mortadella and soppressata; and even spicy, smoked almonds.

#6403 ~~\$35.00~~ \$19.25**ONE-HOUR CHEESE**

It's a DIY cook's dream come true: It's pizza night, and you've made not only the crust and sauce, but the mozzarella, too. Or, you're whipping up quesadillas for a snack, using your homemade Triple Pepper Hack cheese. This book includes 16 recipes for fresh cheeses that can be made in an hour or less, using readily available ingredients and tools. And, they'll be more delicious than store-bought!

#7407 \$14.95

NEW!

**THE ART OF NATURAL CHEESEMAKING**

David Asher practices and preaches a traditional, but increasingly counter-cultural, way of making cheese—one that is natural and intuitive, grounded in ecological principles and biological science. Introductory chapters explore and explain the basic elements of cheese (milk, cultures, rennet and salt), required tools, and the cheese cave.

#7640 \$34.95

NEW!

**SAVING THE SEASON**

Strawberry jam. Pickled beets. These are the tastes of Kevin West's Southern childhood, tastes that inspired him to "save the season." Here, West presents 200 recipes for sweet and savory jams, pickles, cordials, cocktails, candies and more. This book is the ultimate guide for cooks and the only book you need to save the season throughout the entire year.

#7693 \$35.00

**MEALS IN A JAR**

*Meals in a Jar* provides step-by-step, detailed instructions for creating all-natural breakfast, lunch and dinner options that you can keep on a shelf and prepare in minutes. These scrumptious recipes allow even the most inexperienced chefs to serve delicious dishes. Not only are these meals perfect for after-school study sessions and rushed evenings, they also make for tasty fare on family camping trips and can be lifesavers in times of disaster.

#6657 \$15.95

**HOMEMADE FOR SALE**

*Homemade for Sale* is the first authoritative guide to conceiving and launching your own home-based food startup. Packed with profiles of successful cottage-food entrepreneurs, this comprehensive and accessible resource covers everything you need to get cooking for your customers, creating the items that by their very nature are specialized and unique.

#7537 \$22.95

**FERMENTED FOODS FOR HEALTH**

*Fermented Foods for Health* includes meal plans of fermented foods for addressing specific ailments and repairing the metabolism. Author Deirdre Rawlings includes 75 delicious recipes that show readers how to ferment everything from vegetables and fruits to meat and dairy. She explains how to use each ferment to realize specific health benefits, such as balancing the body's pH, increasing enzyme production or strengthening immunity.

#6764 \$21.99

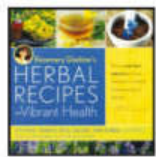
**COMFORT FOOD COOKBOOK**

Bring tasty, old-fashioned comfort food to your table at every meal with the *Comfort Food Cookbook*, a collection of more than 230 recipes from the archives of *Grit*, a long-running country-lifestyle magazine. Discover how easy it is to make delicious biscuits, cornbread and other classic family favorites with wholesome ingredients.

#7289 \$24.99

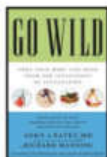


## natural health

**ROSEMARY GLADSTAR'S HERBAL RECIPES FOR VIBRANT HEALTH**

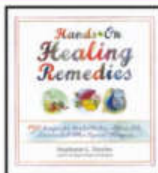
This practical compendium of herbal wisdom is a must-have for everyone. Promote vibrant health and radiant beauty, soothe everyday ailments, and ease stress and anxiety with 175 simple herbal recipes for everything from infant colic or dry skin to cold symptoms or insomnia.

#4885 \$16.95

**GO WILD**

Harvard Medical School Professor John Ratey, M.D., and journalist Richard Manning investigate the power of living with awareness of our genetic makeup when making choices in the areas of diet, exercise, sleep and more. *Go Wild* examines how understanding our core DNA will help us combat modern diseases and psychological afflictions, from diabetes to depression.

#7449 \$27.00

**HANDS-ON HEALING REMEDIES**

Author Stephanie Tourles offers 150 original recipes for herbal balms, oils, salves, liniments and other topical ointments you can make to treat a wide range of conditions, from headaches and backaches to arthritis, tendonitis, fungal infections, anxiety, cuts and scrapes, splinters, and cracked skin. These preparations are all-natural, effective, safe, and fun to prepare.

#6496 \$18.95

NEW!

**HERBAL GODDESS**

Master herbalist Amy Jirsa offers recipes and ideas for exploring and embracing the distinctive qualities of 12 powerful healing herbs—chamomile, rose, dandelion, holy basil, nettle, calendula, lavender, and more—by immersing yourself in every aspect of the herb and naturally coming to understand its innate properties. She guides you through this immersion with delicious teas and foods, luxurious salves, skin and hair care treatments, complementary yoga poses, meditations and more.

#7605 \$19.95

**500 TIME-TESTED HOME REMEDIES AND THE SCIENCE BEHIND THEM**

From insect bites, insomnia and upset stomach to nasal congestion, stress and heart health, this book offers easy, effective recipes to bolster your resistance to illness, ease aches and pains, and manage minor ailments naturally. The authors explain the science behind these remedies, debunk common myths, and let you know when to call the doctor. The book's 500 recipes contain readily available, inexpensive and safe ingredients.

#7017 \$21.99

**DENTAL HERBALISM**

The authors provide recipes for herbal toothpastes and rinses, poultices for oral pain and inflammation, and teas and tinctures for intervention, prevention, and daily dental care. This authoritative yet practical guide empowers each of us to reclaim the health of our mouths and sustain a full, strong set of teeth for a lifetime.

#7621 \$19.95

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## organic gardening



### EPIC TOMATOES

Craig LeHoullier, tomato adviser for Seed Savers Exchange, offers everything a tomato enthusiast needs to know about growing more than 200 varieties of tomatoes—from sowing seeds, planting and cultivating to collecting seeds at the end of the season. He also offers a

comprehensive guide to the various pests and diseases of tomatoes and explains how best to prevent or survive them.  
#7504 \$19.95



### THE SEED GARDEN

With clear instructions, lush photographs, and easy-to-comprehend profiles on individual vegetable crops, this book teaches readers how to go about conserving important varieties for future generations and for planting out in next year's garden. *The Seed Garden* also provides a deeper understanding of the importance of saving genetically valuable varieties of vegetables that have evolved over the centuries through careful selection by farmers and home gardeners.

#7618 \$29.95



### THE WILD WISDOM OF WEEDS

*The Wild Wisdom of Weeds* is the only book on foraging edible weeds that focuses on the 13 weeds found all over the world, each of which offer culinary and medicinal value. The 13 plants covered in this book are dandelion, mallow, purslane, plantain, thistle, amaranth, dock, mustard, grass, chickweed, clover, lamb's-quarters and knotweed. Including more than 100 unique recipes, Katrina Blair's book teaches us how to prepare these wild plants from root to seed.

#7435 \$29.95



### THE EDIBLE FLOWER GARDEN

*The Edible Flower Garden* is a beautiful collection of flowers that can be used for cookery—from candied violets and roses to decorate appetizers and cakes; to nasturtiums for a colorful shrimp salad; to daylily buds, pink clover and wild mustard

flowers that are tossed together in a spectacular stir-fry.  
#6665 \$16.95



### THE GARDEN PRIMER 2nd EDITION

The most comprehensive and entertaining single-volume gardening reference ever printed now focuses on 100 percent organic methods. This updated version of Barbara Damrosch's classic guide rejuvenates the original material while maintaining its primary appeal: practical, creative ideas and the friendly style of an "old-fashioned dirt farmer."

#3896 \$18.95



### SEED LIBRARIES

A growing movement is striving to preserve and expand our stock of heritage and heirloom edible plant varieties through seed saving and sharing. *Seed Libraries* is a practical guide to saving seeds through community programs, providing step-by-step instructions for setting up a seed library, a wealth of ideas to help attract patrons and keep the momentum going, examples of existing libraries, and other types of seed-saving partnerships.

#7539 \$19.95



### EDIBLE LANDSCAPING 2nd EDITION

Rosalind Creasy's expertise on edibles and how to incorporate them into beautifully designed, outdoor environments was first showcased in the original edition of *Edible Landscaping*, hailed by gardeners as a game-changing classic. Drawing on the author's decades of research and experience, this new edition presents everything you need to know to create an inviting home landscape that will yield mouthwatering vegetables, fruits, nuts and berries.

#4565 \$44.95



### THE EDIBLE HERB GARDEN

This book is full of practical information and personal experience, with plenty of detail on how to take your herbs from the garden to the table with panache.

#2324 \$16.95



### THE TAO OF VEGETABLE GARDENING

In her latest book, groundbreaking garden writer Carol Deppe focuses on some of the most popular home garden vegetables—tomatoes, green beans, peas and leafy greens—and through them illustrates the key principles and practices that gardeners need to know to successfully plant and grow just about any food crop.

#7545 \$24.95



### THE ORGANIC MEDICINAL HERB FARM

Whether you're trying to farm medicinal plants, culinary herbs or at-risk native herbs exclusively, or are simply wanting to add herbs to the crops you're already growing, successful small-scale herb farmers Jeff and Melanie Carpenter will guide you through the entire process. The Carpenters cover all the basic practical information farmers need to know to get an organic herb farm up and running.

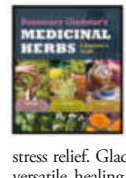
#7617 \$39.95



### GROW A LITTLE FRUIT TREE

Expert pruner Ann Ralph reveals a simple yet revolutionary secret that keeps an ordinary fruit tree much smaller than normal. The resulting little trees take up less space, require less care, offer an easy and bountiful harvest, and make a fruitful addition to any home landscape. *Discount available until Nov. 30, 2015.*

#7565 ~~\$16.95~~ \$12.71



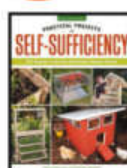
### ROSEMARY GLADSTAR'S MEDICINAL HERBS

With Rosemary Gladstar's expert advice, anyone can make their own herbal remedies for common ailments, such as dandelion-burdock tincture for sluggish digestion or lavender-lemon balm tea for stress relief. Gladstar profiles 33 of the most common and versatile healing plants, and she then shows you how to grow, harvest, prepare and use them.

#5948 \$14.95



## diy



### PRACTICAL PROJECTS FOR SELF-SUFFICIENCY

In *Practical Projects for Self-Sufficiency*, you'll find a couple dozen projects to help you develop and grow your self-reliant lifestyle. The projects are organized into four categories: Food Prep and Preservation, Homestead, Garden, and Animals. This book shows you exactly how to do each project by employing beautiful photos and complete plans.

#7400 \$19.99



### BUILD YOUR OWN BEEKEEPING EQUIPMENT

Tony Pisano's step-by-step illustrated instructions show you how to build everything you need to keep bees, including hive bodies, supers, covers, hive stands, frames, swarm catchers, feeders, and more. You can choose from different hive styles, and many of the 35 projects can be made using only hand tools.

#6730 \$19.95



### PROJECTS TO GET YOU OFF THE GRID

This collection of 20 projects illustrate just how simple it can be to make your own backyard chicken coop or turn a wine barrel into a rainwater collector—plus so much more. This collection from Instructables uses the best that their online community has to offer, turning a far-reaching group of people into a mammoth database of ideas to make life better, easier, and in this case, greener.

#6917 \$14.95



### DIY SOLAR PROJECTS

Advances in solar technology have made many DIY-friendly products available to consumers. Among the step-by-step projects are a solar water-heating system you can build and install yourself for less than \$1,000; simple thermosiphon solar heat collectors for barns and outbuildings; and "heat grabbers" that you can fabricate for \$50 in materials and position below a south-facing window to provide auxiliary winter heat. Get ready to tap into solar power in a big way!

#5594 \$21.99



### SOAP CRAFTING

In *Soap Crafting*, author Anne-Marie Faiola walks you through every step of 31 exciting recipes, complete with simple instructions and great photographs. She makes it easy to master the techniques you need and produce the soaps you want, whether for home use or to sell.

#6851 \$19.95



### DIY WOOD PALLET PROJECTS

With *DIY Wood Pallet Projects*, you can finally personalize your space without having to spend a fortune to achieve that perfect, rustic chic look. Featuring 35 creative upcycling ideas, you'll transform old wood pallets into beautiful projects that will help fill your home and yard with style and personality.

#7419 \$19.99





## homesteading and livestock

**STOREY'S GUIDE TO RAISING PIGS 3<sup>rd</sup> EDITION**

This trusted resource for new and experienced pig farmers provides authoritative advice on breed selection, housing, humane handling and butchering, disease prevention and treatment, and more. This updated third edition includes thorough coverage of green-farming methods and an expanded breed guide, including information on rare and heritage breeds.

#4649 \$19.95

**POSSUM LIVING**

In *Possum Living: How to Live Well Without a Job and with (Almost) No Money*, author Dolly Freed shares why she decided to shun the rat race and live off the land on a 1/2-acre lot outside of Philadelphia. Originally published in the late 1970s, *Possum Living* is part philosophical treatise and part down-to-earth how-to, and provides a no-nonsense approach to beating the system and becoming self-sufficient—even in suburbia.

#4513 \$16.00

**FOLKS, THIS AIN'T NORMAL**

In *Folks, This Ain't Normal*, Joel Salatin discusses how far removed we are from the simple, sustainable joy that comes from living close to the land and the people we love. Salatin has many thoughts on what "normal" is, and he shares practical and philosophical ideas for changing our lives in small ways that can have big impacts.

#5743 \$16.00

**FIELDS OF FARMERS**

Based on his decades of experience with interns and multigenerational partnerships at Polyface Farm, farmer and author Joel Salatin digs deep into the problems and solutions surrounding the land- and knowledge-transfer crisis. *Fields of Farmers* empowers aspiring young farmers, midlife farmers and nonfarming landlords to build regenerative, profitable agricultural enterprises.

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This highly readable and entertaining guide brings together answers to common problems faced by homesteaders young and old, urban, suburban, and rural. The book provides creative projects that maximize available resources, including animal-management strategies for the yard, garden and field; pole building construction techniques; replacing farm machinery with homemade hand tools and implements; and leveraging increased self-sufficiency into a home-based business.

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## nature and environment

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**TINY HOMES: SIMPLE SHELTER**

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# Layers of Benefit SMART FOREST MANAGEMENT



Thinning weak and spindly trees from our forests and woodlots improves forest ecology, builds the soil and can even boost the economy.

**T**oo often, farmers and gardeners leave forestland to its own devices, as if thinning trees and strategically managing their woodlots would desecrate some sacred shrine to wildness. That woodlot out behind your garden, however, needs stewardship just as much as any other part of your homestead. The resources it offers go far beyond providing fuel for your woodstove.

## A Brief History of Forest Management

This might be news to some: Dense forests were uncommon in many regions of North America 600 years ago. Some indigenous people routinely burned the landscape to control dense undergrowth and create more pasture and forage for game. Widely spaced trees grew stronger with more room to

spread out and more nutrients available. (For more on Native American forest-management methods, see *Fire in America: A Cultural History of Wildland and Rural Fire* by Stephen J. Pyne.)

New discoveries about the precolonial landscape reveal a history of meticulous attention to forest ecology with intentional manipulation and alteration of plant and animal communities. Because the brush was burned routinely, fires from such sources as lightning strikes didn't have the fuel to become towering infernos. Rather, they were what foresters today call "cool fires." These less ferocious fires don't jump into the tree canopy, but stay low to the ground, where they burn brush, brambles and small saplings.

Cool fires kill primarily the weaker trees. Strong trees survive these fires and become even stronger because their competition is removed, just as garden vegetables thrive when given plenty of room and freedom from competing weeds.

If we were to close our eyes and imagine what an intentionally burned landscape looked like in the year 1500, we'd see widely spaced trees. Few trees would be crooked, diseased, stunted or otherwise inferior. Century after century, prior to European arrival, North American forests flourished under this forest stewardship. Here's the key point: This management killed weak trees, and left superior genetic stock. Through the centuries, careful forest stewardship helped to improve genetics and create the magnificent cathedral specimens that early settlers described in their journals.

In Native American silviculture, large, widely spaced trees were a natural result of wise management. Further, native



1. A crew thins an acre of dying Virginia pine to improve the forest and make animal bedding.



peoples used primarily small saplings and pole timber to build homes and other structures and for cooking. Without saws in their tool chests, the indigenous groups couldn't efficiently harvest large trees. Thus, the trees they didn't use were able to grow quite large.

## Stewardship Fail

When colonists arrived, they saw the big trees as the most valuable in the forest. The newcomers had steel axes and saws, which enabled them to not only chop down large trees, but to slice them into lumber.

This reversed the multicentury—perhaps multimillennia—Native American silviculture. With value skewed toward big trees, the tallest and best were the first to be harvested. Today, our forests are centuries into having the best trees hacked down and the poorest left to grow. Add to that situation decades of misguided fire suppression that has focused on preventing all fires at any cost, and you end up with forests that are choked with vegetation and full of spindly, stressed trees competing for scarce water, sunlight and growing space.

No livestock farmer would select many weaklings as breeding stock. No seed producer would save seed from the weakest vegetables to plant next year. The history of ecology and agriculture is largely the chronology of genetic selection wherein the stronger specimens reach breedable status and the weaker ones die off or are killed by predators.

Most contemporary forest management does the exact opposite, taking the best and leaving the worst. Foresters refer to this as “high-grading,” a practice that provides a major conundrum for us tree-huggers (a designation I proudly claim), who'd rather



2. Happy as pigs in bedding: These hogs will turn wood chips into compost.

see a wood-based economy that incentivizes taking the worst and leaving the best to grow stronger.

## Your Homestead Woodlot

If I want to upgrade my woodlot, I can't continuously take the straight, tall, solid trees; I must figure out a way to take the diseased, infirm, crooked and weak. These imperfect specimens occupy valuable space that could be devoted to growing genetically superior individuals. Remember, a poor cow eats just as much as a good cow. Nobody would argue with a farmer who culled the poor cow and replaced it with the good cow's heifer calf. Likewise, nobody would argue the

wisdom of disregarding seeds from less-than-perfect vegetables.

So why do we enter our degraded, genetically inferior woodlots as if they're too sacred to be weeded out with a chainsaw? Most (and probably all) of our woodlots have far more weedy, weak and wounded trees than good ones. How do we pay ourselves for the time and effort it takes to get rid of them?

Today's forest economy recognizes lumber as the forest's only value. A forest economy built only on board feet will inherently degrade the forest. We desperately need to value the culls so our woodlots can regrow superior genetics and reverse the multicentury slide to weaker species.

## From Faulty Forests to a Compost Economy

Consider this question's amazing ramifications: What if all the money currently spent in the United States on chemical fertilizer were spent instead on wood-based carbon to feed the soil? To fully explore this question would take a whole book, but let me give a teaser.

A large amount of the waste that has been dumped into landfills is compostable, and that fact is an immoral blot on our society. If you're reading MOTHER EARTH NEWS, you most likely understand that carbon is what builds soil. MOTHER's pages are filled with tips on composting, mulching, intensive grazing, and feeding earthworms to nourish our good Earth.

If we moved to an economy that replaced all chemical fertilizers with compost, we would need vast stores of carbon. We might not have to look very far for them. I recently traveled through northern Colorado and was shocked to see millions of acres of dead trees. When I



3. Salatin spreads the composted animal bedding to fertilize his fields.





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Culling weak trees removes competition and allows superior specimens to thrive.

asked my hosts why the trees were all dead, the answer was quick and axiomatic: no diversity, bad fire-suppression policies and too-thick growth, all of which paved the way for invasive diseases and tree-killing beetles and worms.

With today's machinery, from chainsaws and chippers to tub grinders and front-end loaders, many wildfires should be seen as a manifestation of neglectful stewardship, pure and simple. Instead of following the path that gave us decades of fire suppression, Smokey Bear and catastrophic forest fires, we could recreate a silviculture that would actively improve the forest. We could cull all of those weak trees and compost them, thereby embracing a smarter, more holistic economy.

Last winter, we rented a Vermeer chipper that could handle 19-inch-diameter material. In two days we cleared an acre of old, dying Virginia pine and converted it into four tractor-trailer loads of carbon that we used to bed our cattle, chickens and pigs through winter. By spring, that bedding had become compost, which we spread onto our fields—50 acres' worth of soil improving nutrients.

Now, folks, if 1 acre of dying forest can cover 50 acres of fields with compost, imagine what that practice could do as a national policy. We'd have thousands of jobs employing people on the landscape, not in Dilbert-style cubicles chasing fantasy numbers around cyberspace: real work on real land for

real people doing truly meaningful land management.

Can you imagine the earthworms' dancing exuberance if such a scheme took hold? Instead of running from toxic chemicals, they'd be feasting on compost, and aerating, mineralizing and loosening the soil.

Wood-pellet technology is fast approaching the do-it-yourself level, offering yet another enterprise for forestry products. Wood gasification, rocket stoves, wood-fired steam engines—with all the latest designs of wood-powered technology, we could quickly create an economically viable forestry-upgrade program. I can imagine an entire tree-weeding industry replacing our current military-based, petroleum-centric chemical fertilizer paradigm.

This idea is not a cap-and-trade scheme, not a contrived carbon-trading Wall Street plan, but rather a protocol as old as nature itself. Indeed, it honors and relies on the oldest tried-and-true Earth stewardship pattern we know: the carbon cycle. That's something all of us can embrace. 🌳

Joel Salatin culls his woodlot to create mountains of compost on his farm in Swoope, Virginia. He is the author of *Folks, This Ain't Normal* and numerous other books about the business and philosophy of sustainable farming, some of which are available on Page 65.



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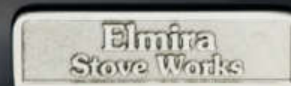
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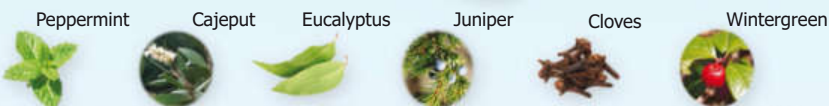
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Circle #44; see card pg 81





# Livestock Guardian Dogs to the Rescue

**W**e manage a flock of about 130 sheep. For a decade, we tolerated the occasional loss of a small or weak lamb to a coyote, figuring that the coyotes were here first and that they had a right to make their living off the land as well. About a year ago, however, they started hunting in a pack, digging large holes under our fences faster than we could block them, and picking off our lambs at a relentless rate—we lost 40 percent of our flock that spring.

We had no interest in shooting the coyotes, and the application of wolf urine to our property, which a friend recommended, didn't work. Our next line of defense was a livestock guardian dog. We brought home a 2-year-old, 175-pound Great Pyrenees named Sam. The first thing that struck us was Sam's body language around the sheep. We were accustomed to our Border Collies, who are constantly in motion and always hoping we'll need them to move the herd. Sam, on the other hand, walked slowly, kept his eyes averted from the sheep, plodded along placidly, and did everything a dog could do to put a nervous herd at ease.

The first night after we brought Sam home, a coyote showed up at a dug-out place along the fence. Sam met him on the other side. For about two hours they had a standoff, with the coyote attempting to intimidate Sam, who firmly patrolled that section of fence, barking ferociously and blocking the coyote's entrance. The coyotes kept trying for the next several nights, but eventually their attempts diminished. Within two months, we were completely sold—so much so that we decided to expand our dog patrol to two members. We found an 8-week-old Great Pyrenees puppy for Sam to train. We named him Saul, and since that day they've been inseparable buddies.

Five months later, more lambs were born. The herd looked and acted differently with their protectors nearby. The sheep were visibly



**Sam, a 2-year-old Great Pyrenees, gets along well with both family and flock.**

more relaxed, and they spent more time spread out in the pasture and less time clumped up in a defensive mass. The ewes were much more willing to let their lambs run and play together, whereas before they had constantly called their babies back to their sides. Clearly, the flock now perceives itself to be relatively safe with its guardians on duty.

I wish we had taken this route ages ago. If you have good fences and find a reputable breeder, I'd absolutely recommend livestock guardian dogs for your flock. To read more of Sam and Saul's adventures, go to <http://goo.gl/PXJytM>.

*Carolyn Welch  
Lawrence, Kansas*

## Save Wash Water

Every evening when I would wash my face, I used to have a dilemma: Wash my face with cold water, or waste precious water by letting the faucet run until the water was warm. Luckily, I found an easy solution!

Most evenings, someone in my house decides to heat water in a kettle to make some tea. By the time we're getting ready for bed, the water is no longer steaming hot, but it's still nice and warm—perfect for pouring over a washcloth and scrubbing my face without having to run any more water.

*Stacy Miller  
Moscow, Idaho*

## A Better Bungee

I've found that most bungee cords wear out, at which point the ends break off or the cords lose their stretchiness. As a solution, I get old bicycle tire tubes free from my local bike shop and cut them into strips. I attach a hook from one of the broken bungee cords to one of the rubber tube strips by pushing the strip through the hook and then securing it with a knot.

You can cut the rubber tubes to any length, and, in my experience, these DIY bungee cords last much longer than store-bought versions.

*Ed Pfeifer  
Remsenburg, New York*

## Garbage Disposal Apple Grinder

I needed an apple grinder to make cider, but I didn't want to spend the money for an expensive, store-bought machine. Instead, I found a new 1-horsepower garbage disposal on Craigslist for \$70.

I mounted the garbage disposal in a wooden stand, using the same technique I would have used if installing it in a sink. Rather than use an actual sink, however, I used a stainless steel bowl with a hole in the bottom; this bowl acts as a funnel to help the apples roll into the grinder. I wired an on/off switch in the power cord to control the grinder. I sealed the switch



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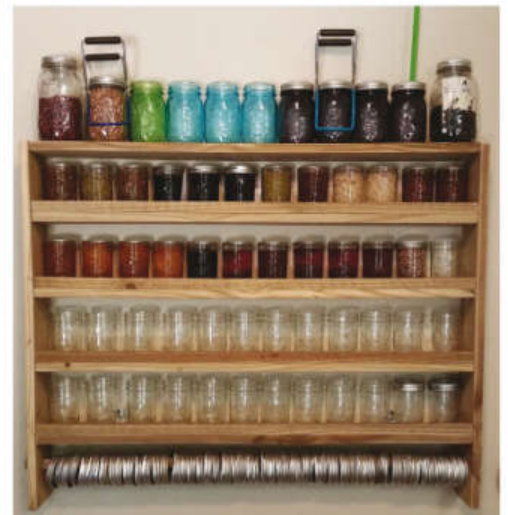
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## Homemade Shelf for Canning Supplies

I needed a place to store my canned goods and canning supplies, so my husband crafted a homemade shelf out of scrap wood. The bottom piece is built like a towel rack, and it slides out so I can slip canning jar rings onto it. He made each shelf deep enough to fit one row of jars. To keep a jar lifter in place, I simply clamp it over a jar.

No more searching for all of my canning supplies!

*Amanda Cameron  
Empire, Alabama*



with silicone for safe wash-downs, and covered the stand with several heavy coats of paint to create a clean, easily washable surface. This setup has worked great for my annual cider making.

If I were to build a more “professional” unit, I would consider using stainless steel fasteners, a waterproof switch, and plastic (instead of wood) for the stand.

I made a YouTube video about this homemade apple grinder, during which I explain the dimensions and basic building process. You can watch the full video at <http://goo.gl/dxbtdC>.

*Connor Bishop  
Guilford, Connecticut*

## Hole in One: Tool Storage

I needed a place to store my garden tools, including various rakes, shovels, hoes and more. My tools used to just lean against the corner of my shed, and I sometimes lost my hand tools. I needed something to hold all of my gear and keep it organized.

I found an old golf club bag at a garage sale for a dollar. The main opening in the top works great for organizing all of my large, long-handled tools, and my smaller hand tools fit well in the golf bag's large front pocket.

*Charles Cope  
Saratoga Springs, New York*

## A Gouda Solution

A big block of cheese often costs less per pound than smaller sizes. We used to simply cut off cheese when we needed it,

and store the bulk chunk in the fridge. Sometimes we couldn't eat it fast enough to prevent the cheese from getting moldy, however, and we wondered whether we were really saving money after all.

After some experimentation, we've figured out a good way to store large amounts of cheese in the refrigerator. First, remove the plastic packaging entirely and slice off the amount of cheese you want for the immediate future. Then, wrap the remaining block in wax paper. Slide the wrapped cheese into an airtight container, and place it in the fridge. It stays fresh much longer this way!

*Karen Stodola  
Woodinville, Washington*

*Some cheese can also be successfully frozen. Only freeze cheese if you plan on cooking it, however, because the texture may change. —MOTHER*

## Upcycled Dish Scrubber

While removing the mesh bag from around a frozen turkey, I said to myself, “This must be good for something.” I cut the bag to be flat and gave it a good washing, and it became a scrubbing pad to wash dishes. Mesh onion bags work even better!

Both types of bags are kind to nonstick surfaces and effective at removing stub-



born food particles. Just roll the mesh to fit your hand. Best of all, you can open it up to wash and rinse it clean. These bags don't have any hidden places for bacteria to grow, and they'll come free with your food purchase.

*Nancy Gere  
Homosassa, Florida*

## Chickens — Lay Off the Eggs, Already!

I recently had my first experience with egg-eating chickens. I've kept chickens for a number of years, and had never had this problem before. When I noticed that one of my flocks was no longer producing eggs, I chalked it up to winter downturn. However, the problem didn't correct itself after I turned on an artificial light. By the time I cracked the case, I had multiple

chickens eating their own eggs—shells and all! I did quite a bit of research, and everything pointed to culling the offending bird or birds. Well, because this is a hobby and not a financial endeavor, I decided to experiment a little before resorting to killing any of my hens.

I purchased fake eggs—the kind used to teach chickens where to lay—and placed them in the nests. My thinking was that if the chickens couldn't crack these eggs, then they would lose interest in eating the real eggs. For the next few months, I set about checking the coop multiple times a day to remove the real eggs and leave the fake eggs in the nests. Now, I can leave the real eggs in the nests for full days as before, and my plan seems to have worked. My chickens have stopped eating their eggs!

## Plant Mapping for Future Homeowners

According to my realtor, people buy and sell their homes every seven years on average. That means, surely, that many MOTHER EARTH NEWS readers will say goodbye to much-loved yards and gardens in the next few years.

After my husband and I purchased our first home, we were thrilled to finally have a yard. We planted edibles and ornamentals. When we later needed to sell our home to take employment elsewhere, I knew I'd miss the outside of our home more than the in-

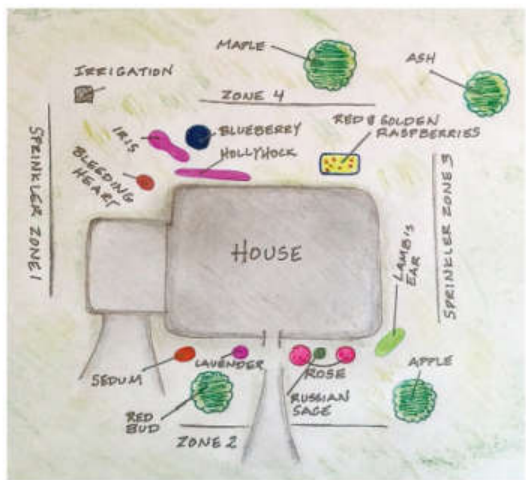

side. For nine years we had enjoyed our yard, and, of course, the sale of our home meant the loss of the ornamental and edible plants we'd grown. I wanted the new owners to know about the landscape so they, too, could enjoy it, and wouldn't unknowingly remove any plants.

As a former cartographer, I decided to make a map. I provided the new owners with a simple sketch labeled with the names of plants and locations of sprinkler systems. You don't need to be trained in mapmaking to draw a sketch of your

landscape. Your map doesn't need to be perfect or drawn to scale, either. The purpose is to share a visual story of your yard.

My family is now living in another house in another state. I would've appreciated a map detailing our new landscape. (But I must admit, each time we've spotted a mystery plant pushing its way up through the dirt has been a treat.)

*Heather Villa  
Roseburg, Oregon*





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Circle #49; see card pg 81



Circle #52; see card pg 81

Based on my experience, spending a few bucks for some fake eggs, collecting the real eggs more often than usual, and having some patience may eliminate the need to wipe out a flock and start over.

*Kevin Howard  
Canaan, New Hampshire*

## Best Coop Poop Scoop

We've cleaned chicken coops for about 20 years now, and we've found that the best tool for efficiently shoveling out soiled shavings and bedding into a compost cart is an inexpensive snow shovel. This type of shovel is light and broad, and has tall enough sides to hold in heaps of old shavings. Flip the snow shovel over, and it makes a great "rake" for gathering soiled shavings into piles. Better than a traditional flat shovel—or even a mucking shovel—the snow shovel makes cleaning a coop, if not fun, well, a lot faster.

*Tom Preble  
Peyton, Colorado*

## A Hanging Organizer

We're always on the lookout for ways to reuse or repurpose materials to save time, money or space. One of the best things I've done is to install an inexpensive hanging shoe rack outside each horse stall to hold brushes and tools. I love the clear pockets that allow me to see every item. I also use these neat shoe organizers in our garden shed to hold seed packets, and I hung some in the toolshed for small hand tools, nuts, bolts and other assorted hardware.

*Susan Neal  
Beaver Dams, New York*

## A Cloth Diaper Advocate

As a young family that frequently looks to your magazine for sustainable-living ideas, we wanted to share some benefits of using cloth diapers with your readers. In choosing cloth, one of the biggest factors for my partner and me was the ecological impact. We're happy to reduce our waste by using cloth, and to avoid contributing to the billions of disposable diapers in landfills.

A common misconception is that cloth diapers are more expensive than disposable diapers, but that's not really the case. With an investment between \$380





and \$1,680 (depending on the cloth diaper system you choose), you can diaper your infant from birth until potty training in new cloth diapers. That estimate even includes the cost of water and energy required to wash your diapers. You can save significantly more money by purchasing pre-owned cloth diapers. Even if you choose the most expensive cloth diapers brand new, you'll still save money compared with the \$2,580 it would take to buy disposable diapers over the course of a child's life. (See a cost-comparison chart at <http://goo.gl/Lgw7qb>.)

With that initial investment, you can then go on to diaper any future children, or even sell the diapers. Modern cloth diapers hold their resale value well, and a large number of people are looking for alternatives to disposable diapers.

With so many different styles to choose from, a cloth diaper is available to suit any family's needs. I would encourage parents who are interested in learning more to contact a cloth-diapering shop (find some great options at [www.Etsy.com](http://www.Etsy.com)).

*Lindsey Woods  
Ingleside, Ontario*

## Leftover Wallpaper

You can purchase remnant wallpaper rolls at thrift stores at a nominal price and in a variety of styles. Repurpose these rolls to line storage shelves in your home or garage for easy-to-clean protection and a dash of style.

*Caroline Burgess  
Mesa, Arizona*

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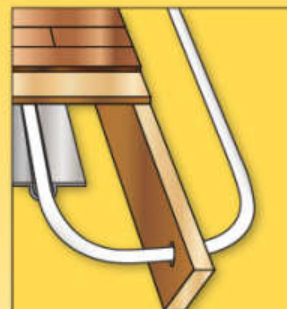
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Circle #50; see card pg 81

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Circle #12; see card pg 81



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# Improve Your Soil with Winter Rye

*I want to plant a cover crop in my garden beds this fall. Which cold-hardy crop do you recommend?*

One of your best bets is winter rye (*Secale cereale*), the grain used to make rye flour (not ryegrass, which is a different plant). Winter rye loves cold weather, and it's widely adapted, inexpensive and easy to sow. According to *Managing Cover Crops Profitably*, published by the Sustainable Agriculture Research and Education (SARE) program, rye will even germinate in temperatures as low as 34 degrees Fahrenheit, and will grow through winter wherever temperatures stay above about 38 degrees. It will suppress winter weeds, improve your soil's texture, add organic matter, prevent erosion, and attract beneficial insects when it flowers the following spring. It also makes a terrific winter pasture for poultry—or, you can cut the greens periodically to feed to your flock.

Ordering cover crop seeds by mail can be a bit pricey, but saving your own rye seed is easy. Order seed by mail if you can't find a local supplier, and then sow it in fall. Allow it to grow through the following spring until June, when it will produce seed heads. Snip off the seed heads and then, without threshing the seeds out of the heads, simply plant the heads in fall (see photo above, left). The mature rye plants will be easy to kill after you've harvested their seed heads. Cut



Winter rye seed heads sown directly into soil in fall will grow to maturity the following spring.



the stems at soil level with a serrated harvest sickle or large knife, and then use the straw as mulch or compost. (If you don't own a sickle, Earth Tools offers a nice Italian-made model for only \$23 at <http://goo.gl/nHWpEx>; look under the "SHW" category.)

Growing cover crops in unused beds is one of the best things you can do to improve your soil. To learn more about sowing rye and many other kinds of cover crops, I highly recommend the SARE book mentioned earlier; it's free online at <http://goo.gl/YbzaAX>.

—Cheryl Long

## Pick the Perfect Log Splitter

*I want to split my own firewood this year. Which tools will make the job most efficient?*

If you're envisioning Paul Bunyan employing his double-bitted axe for everything from felling trees to splitting, it's time to rethink. The axe is actually not a splitting tool—it's designed as a cutting tool. Instead, you can opt to use better-suited hand tools, such as a splitting maul, wedges, a sledgehammer, or a combination of the three, to get the most heat out of your firewood.

If you're not interested in swinging a maul or sledgehammer, consider using a dedicated hand splitter, such as the WoodEze Smart-Splitter—a splitting wedge attached to a slide hammer that you raise vertically above the log

and slam into it. You can also choose a hand- or foot-powered hydraulic splitter, for which you supply the pumping power—the hydraulic ram does the rest.

When you're short on time or energy, or expect to split several cords, you may find that a powered splitter is an ultra-efficient luxury worth the investment. Hydraulic splitters are typically rated by their maximal hydraulic force, measured in tons. Most hydraulic splitters rely on a power source to pump hydraulic oil into a hydraulic cylinder (ram) at high pressures, causing the cylinder's piston to move. The end of the piston is generally attached to a flat plate or anvil (on models with a stationary wedge), or to a splitting wedge (on models with a stationary anvil), and is positioned on a track such that, when it moves, the wedge and the plate squeeze a log between them until it splits. Some so-called dual-action hydraulic

splitters have an anvil at either end of the track with a wedge that can split in either direction. These models can increase your hourly output considerably because you won't need to bring the wedge back to the starting position before loading another log.

Many lightweight models are available with a maximal hydraulic force of 4 to 8 tons. These machines are usually powered with electric motors, so they're quiet, and you can safely operate them indoors if desired. Though ideal for splitting dry wood, these little powerhouses can effectively split green wood up to about 12 inches in diameter, assuming it isn't one of the more difficult-to-split species, such as American elm.

If you'll regularly need to split green or dry rounds up to 24 inches long and 12 inches or more in diameter, choose a splitter with at least 12 tons of power—16 tons or more would be



even better. If possible, choose a machine that will operate in both vertical and horizontal configurations, so loading and positioning the wood will be easy from any angle. These machines are heavy, but most are mounted on an undercarriage for mobility. The electric models in this range will likely require a 220-volt electrical source. If you already have a tractor with a three-point hitch and hydraulic system, a PTO and matched hydraulic pump, or a skid-steer loader, you can sometimes save money on a splitter with the same capacity by choosing the tractor or skid-steer mount option. The tractor will power the splitter.

When you plan to split stuff with a diameter of 24 inches or more, or tackle a particularly tough species, then consider a model with 20 tons of capacity or more. In general, if



**Compact, gas-powered splitters can handle most logs with ease.**

your firewood needs add up to several cords each season, the larger models will serve you well—and they'll be able to handle smaller jobs, too. Relatively new are high-speed units that rely on mechanical advantage and inertia to split logs, with a cycle time that's significantly faster than that of most hydraulic splitters. Currently available in rating equivalents up to about 35 tons, options include the DR Power RapidFire and the Super Split.

No discussion of splitting tools would be complete without mention of another screw-type design—the Stickler. You can power this very large, cone-shaped woodscrew by bolting it to a car, truck or tractor axle, or by coupling it with a tractor's PTO, stationary engine—name it and you can use it. Set the screw spinning, stab the end of a

log onto the screw, and keep the log from rotating. As the screw pulls its way into the log, the log will split. Good for logs up to 3 feet long and 40 inches in diameter, this may well be the least expensive and most versatile option, not including wedge and sledge. Like all log splitters, it requires an attentive operator, but is capable of serious production. (The Stickler appeared on the cover of MOTHER EARTH NEWS in 1976.)

## You Can Pickle That: Basic Refrigerator Pickles

*I have an assortment of extra garden produce that I'd like to pickle. Is there a quick, easy recipe I can follow?*

In addition to the familiar cucumber pickles, you can also pickle any sturdy vegetable, including green beans, zucchini, carrots, celery, onions, beets, okra and even some greens.

The key ratio for making refrigerator pickle brine is 1 part vinegar to 1 part water. Note that the vinegar must have at least 5 percent acidity. You can use herbs and spices to season your pickling brine to

taste. While you can safely prepare this recipe using little or no salt, the lack of salt will reduce the quality of the finished pickles' flavor and texture. Add any combination of peppercorns, garlic, dill seed, coriander seed, cumin seed, mustard seed, allspice, mace, cinnamon, cloves, saffron and other seasonings.

Wash the vegetables and cut them into whatever bite-sized shapes you like. You can pack the vegetables into your jars raw, blanched or cooked.

### UNIVERSAL REFRIGERATOR PICKLE RECIPE

The following technique is safe, easy, and flexible enough to adapt to almost any taste. *Yield: 2 quarts.*

**Directions:** Trim and slice the vegetables into any shape you desire.

Combine the vinegar, water, salt, and honey or sugar, if using, in a small pot. Bring to a boil, and remove from heat.

Pack the vegetables snugly into 2 clean quart jars. As you work, layer in the garlic and herbs. At the end, add the peppercorns and whole-seed spices, plus the woody spices, chiles, hot pepper, shallot, or onions, if using.

Bring the vinegar brine back to a boil, and ladle it over the vegetables to fill the jars. Add lids to the jars and allow them to cool to room temperature overnight. Store the cooled jars in the refrigerator, where they will keep for weeks.

—Kevin West, author of *Saving the Season: A Cook's Guide to Home Canning, Pickling and Preserving* (available on Page 65)



### Ingredients

- 2 pounds fresh, firm vegetables, such as cucumbers, squash or green beans
- 2 cups vinegar with 5 percent acidity
- 2 cups water
- 1 tbsp kosher salt (or half as much fine sea salt)
- 1 tsp honey or sugar, optional
- 2 garlic cloves, peeled and lightly crushed
- 4 to 6 small fronds fresh herbs, such as dill, tarragon or Thai basil
- ½ tsp black peppercorns
- ½ tsp whole-seed spices, such as coriander or mustard
- A few "woody" spices, such as 4 whole cloves, optional
- 2 small dried red chiles or slices of hot pepper, optional
- 2 thick slices of shallot or 6 pearl onions, optional



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### Ask Our Experts

After you find the right tools for splitting firewood and learn how to make the best and safest use of them, you'll be able to relax by your toasty fires all winter, contemplating the money you're saving on your heating bills.

—Oscar H. Will III

#### Is Teflon Cookware Safe?

*I was recently given several nonstick Teflon pots and pans, but am concerned about their safety. Should I use them?*

No. Teflon is DuPont's brand of a large class of products that contain perfluorinated chemicals (PFCs), which have contaminated bloodstreams of the general U.S. population. According to the Environmental Protection Agency (EPA), the pathways that enable these chemicals to enter human bloodstreams are not yet fully understood, even after decades of use. These highly persistent, toxic substances

can cause developmental issues and other adverse effects. The EPA has been working for many years to reduce exposure, and in 2005, it found that DuPont had concealed knowledge about Teflon's toxicity for decades.

More than 200 scientists recently signed the Madrid Statement, recommending policies needed in order to protect the public from PFCs, which are used in textiles, carpets, food packaging, cosmetics, smartphones and other products to impart grease resistance, water repellency, fire resistance and nonstick qualities. The Madrid Statement signatories called for consumers to avoid buying products containing, or manufactured using, these substances. Brands to avoid include Teflon, Scotchguard, Stainmaster and Gore-Tex.

To learn more about this issue, read the Environmental Working Group's report online at <http://goo.gl/C6Waeg>.

—Cheryl Long

#### When to Vent Cold Frames

*How should I monitor my garden cold frame on warm days to ensure I'm not frying my plants? Do I need to check the temperature every hour?*

No, not every hour, but you're right to err on the side of vigilance anytime the sun is out—even if the temperature isn't particularly high.

During spring and fall, when temperatures range widely, check your weather report early in the morning. If the day will be sunny with temperatures above 50 degrees Fahrenheit, the cold frame's internal temperature will rise too high for your plants, so you should crack the lids open to allow excess heat to escape. Close your units up at twilight if the forecast predicts nighttime temperatures below your plants' cold-tolerance level.

—Rebecca Martin



Even when snow surrounds your cold frame, the plants inside may need a breath of fresh air.



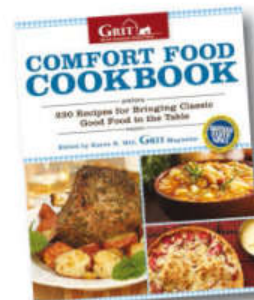


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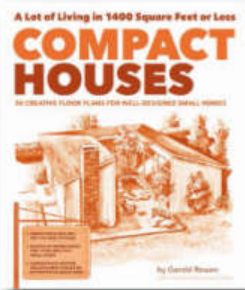
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(CONTINUED FROM PAGE 8)

My 20-year-old daughter has battled Lyme for four years. You can't carry out your goals of a self-reliant lifestyle if you have Lyme disease. I'm happy that you're raising awareness about how to prevent this illness, especially because the majority of your readers spend so much time outside.

*Brittney Williams*  
via Facebook

## Monsanto: You're Under Citizen's Arrest

Thank you for the article "Government Deception About GMOs" (Green Gazette, August/September 2015) that discussed Steven M. Druker's book *Altered Genes, Twisted Truth*. Druker, a public interest attorney, argues that genetically engineered foods are being sold in violation of federal law, and he has challenged Monsanto to try to refute any facts from his books.

## How Can I Keep My Chickens Safe?

I've kept chickens all my life. When I was young, my father introduced me to a backyard flock of Mille Fleur bantams. I adored them as much as any other family pet. So it was no surprise when—after I purchased a small home on almost 2 acres—I quickly established my own flock.

My husband and I fixed up a storage shed on our property to use as a chicken coop, and we brought home a small flock of various breeds. I let the chickens out in the run during the day, and then I closed them up at dusk. Life was good. Everything came crashing down, however, when I went to close the coop one evening and found feathers all over the floor. All but four hens had been killed by a fox. Because we had laid concrete under the wire of the run, I couldn't figure out how the fox had gotten in. We later realized he had dug under the henhouse.

As time went on, we lost two more hens. I began letting the last two hens out of their run during the day to free range. One day I didn't let the girls out because I was going to run errands. Upon my return, my husband shared the grim news: The fox had nabbed the last chickens by squeezing through a space in the wire seemingly too small for a squirrel. Now, every time I look at the chicken run, I'm saddened. Sunflowers are rising from the stray seeds that didn't get gobbled up; it's sort of a memoriam.

I'm not sure what to do next. I won't purchase new hens until I know I have a safe enough place for them, but I thought I'd done that already. There isn't power in the coop, so I can't electrify the fence. I'd appreciate any information you or your readers could share. In fairness to the fox, he was here first.

*Cindy Soulliere*  
Longmont, Colorado



**Mille Fleur bantams, like all chickens, need protection from predators.**

Eventually, predators almost always become a challenge to flock owners. Your best option will be to build an extremely sturdy coop and run with absolutely no areas where predators can squeeze through or dig under. If it's mouse-proof, it should be predator-proof, too. Heavy-duty wire is best—raccoons have been known to get through less expensive "chicken wire," also known as "poultry netting." You could also consider a solar-powered charger for electric fencing; we've had reports that this setup can even stop bears. —MOTHER



Druker's challenge to Monsanto is posted on the Alliance for Bio-Integrity website at [www.BioIntegrity.org](http://www.BioIntegrity.org). Please keep us posted about Monsanto's response—it seems like more people need to know about this!

*Sherri Neuroh  
Nashville, Tennessee*

## The Stink from CAFOs

An egg factory that will house up to 12 million laying hens is being built in our community. Right now, in its first seven buildings, this CAFO (concentrated animal feeding operation) already houses more than 2 million birds. This operation was built within 1½ miles of an RV park and our downtown area, which features a natural hot spring, restaurant and hotel.

We were promised that we wouldn't have to deal with a lot of odor or other problems. Well, they lied. Imagine several 550-foot-long houses that each have 20-foot-tall stacks of manure stored under cover in their back quarters. The fans blow through the chicken houses to cool and dry the manure, and, as a result, small particles, feathers and foul odors escape. It's not a nice addition to our neighborhood, to say the least.

We need to get national coverage of these CAFOs to prevent other parts of our country from being abused by some people's greed.

*Lorna and Theron Proper  
Arlington, Arizona*

*We agree, and we're sorry you're dealing with this issue. See Pages 4 and 11 for some national CAFO coverage. —MOTHER*

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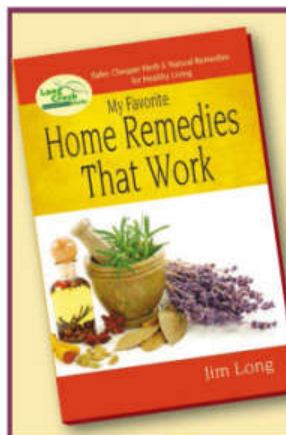
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Circle #54; see card pg 81



Speakers Joel Salatin and Pat Foreman pause for a friendly Fair smile.

## Fun Times at the Albany Fair

I just wanted to say how much my friend and I enjoyed the MOTHER EARTH NEWS FAIR in Albany, Oregon! The workshops were varied, informative and fun. There were lots of vendors and displays to look at, and the fairground itself was laid out well and in a good location. We hope you will consider having the FAIR in Albany again. Thanks for a great weekend!

Julie Hawley  
Albany, Oregon

Thanks for attending, Julie! There's still one more MOTHER EARTH NEWS FAIR left this year: The Topeka, Kansas, FAIR is scheduled for October 24 and 25. Next year, we'll again have several FAIRS, including a new one in Belton, Texas. If you'd like to attend a FAIR, you can find one near you at [www.MotherEarthNewsFair.com](http://www.MotherEarthNewsFair.com). — MOTHER

## Old House, New Life

We bought our house, which was built in 1833, and the surrounding 18 acres in the summer of 2012. The home was abandoned after 1980, and it never had indoor plumbing. When we bought the house, it didn't have any windows, and the structure was in a precarious state because of a past fire.

We've been restoring the home and property with information we've learned from the MOTHER EARTH NEWS magazine, website and FAIRS. We've chosen suitable goat breeds and have patronized good seed companies, plus we've ordered chickens

BRYAN WELCH

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Circle #24; see card pg 81

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and beekeeping equipment. At a 2013 MOTHER EARTH NEWS FAIR, we bought solar panels to put on our barn, and we learned about an interesting foam-insulation provider that we later ordered from. We're so thankful for MOTHER's guidance throughout this big project!

*John and Jeana O'Connor  
Winchester, Virginia*

## Roundup-Ready Beef: Nearly Impossible to Avoid

My husband and I live in southern Utah. We own several horses and three cows. We wanted to find a less expensive way to feed our animals, so we found someone who said we could put our animals on their pasture to graze. We planted alfalfa and triticale in the pasture, but the weeds took over and it was a total flop.

A local hay grower suggested we buy Roundup-Ready alfalfa seed. This is genetically modified (GM) alfalfa that can tolerate being sprayed with Roundup herbicide. He told us that most hay growers in our area use it. We had no idea.

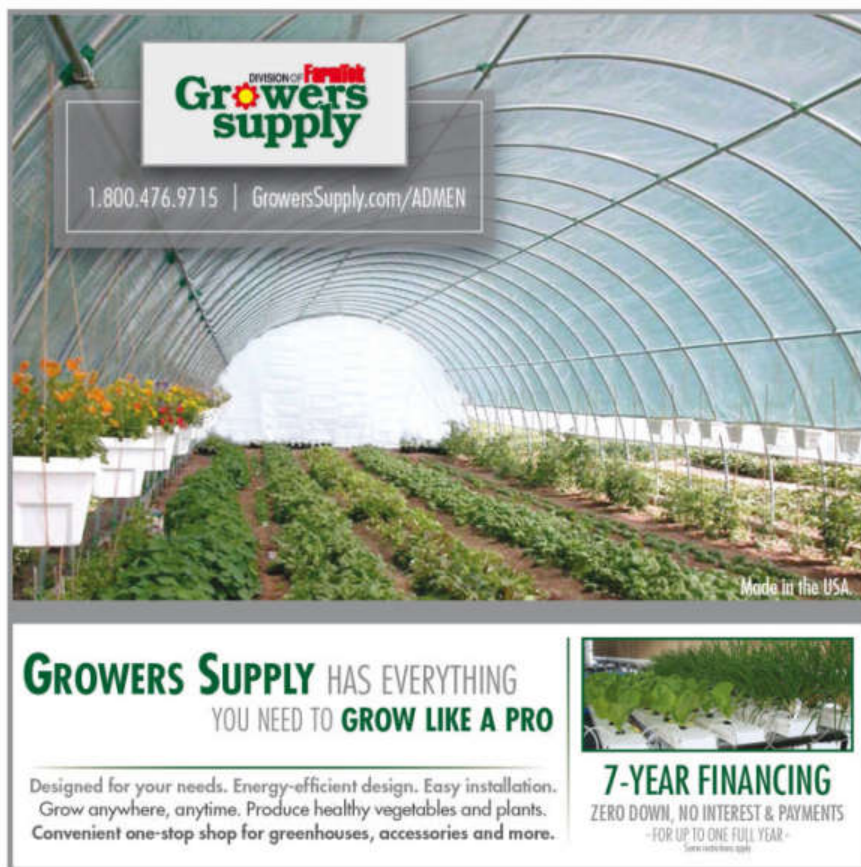
I learned from this experience that most folks don't really know what's in our beef. Is it Roundup-Ready beef? A lot of cows are allowed to graze in open fields. Before they're butchered, they're brought in to feedlots, where they're fed hay cubes and GM corn, soy and grain. In most areas, cows' feed must be supplemented with hay during winter. What kind of hay are they being fed? Is it Roundup-Ready alfalfa? We've found it's almost impossible to find hay that isn't sprayed with Roundup.

We're still working on sourcing feed for our animals that hasn't been contaminated with this toxic weedkiller.

*Darlene Judd  
Kanab, Utah*

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Circle #19; see card pg 81



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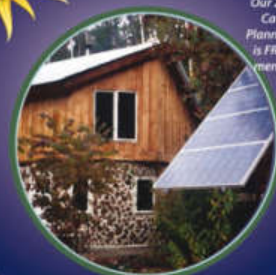


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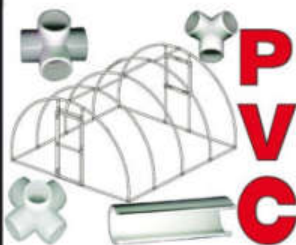
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